NC State Graduate Catalog

The Graduate Catalog contains Graduate School requirements and pertinent information for individual graduate programs, a current list of graduate faculty, and a selection of other resources for new students. The Catalog is informational only and is subject to change. Official policies and procedures are in the Graduate Handbook (https://grad.ncsu.edu/students/rules-and-regulations/handbook/) and on the NC State Policies, Rules and Regulations web site (https://policies.ncsu.edu/).

Use the search bar below to exclusively search the Graduate School Catalog.

North Carolina State University (https://grad.ncsu.edu/students/rules-and-regulations/catalog/nc-state/)

The Graduate School (https://grad.ncsu.edu/students/rules-and-regulations/catalog/grad-school/).

Application and Admission (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/)

<u>Graduate Programs: Graduate School Requirements (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/)</u>

Registration (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/)

Tuition and Fees (https://grad.ncsu.edu/students/rules-and-regulations/catalog/tuition/).

Financial Support (https://grad.ncsu.edu/students/rules-and-regulations/catalog/financial-aid/)

Fields of Graduate Instruction (http://www.grad.ncsu.edu/catalog/default.asp)

Course Descriptions (https://www.acs.ncsu.edu/php/coursecat/index.php)

Graduate Faculty (https://grad.ncsu.edu/about/people/graduate-faculty/)

NC State Policies (https://grad.ncsu.edu/students/rules-and-regulations/catalog/policies/)

Catalog Archives (https://grad.ncsu.edu/students/rules-and-regulations/catalog/archives/) (PDF)

This Catalog is intended for informational purposes only and is subject to change. Please see the <u>Graduate Handbook</u> (https://grad.ncsu.edu/students/rules-and-regulations/handbook/) at for changes in policies, rules, regulations, and procedures.

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North Carolina State University

North Carolina State University (https://www.ncsu.edu/) (NC State) is a national center for research, teaching and extension, and its graduate education has stood for quality for more than a century. As a land-grant state university, it shares the distinctive characteristics of these institutions nationally — broad academic offerings, extensive public service, national and international activities, and large-scale extension and research programs.

NC State is one of 16 constituent institutions of the multi-campus <u>University of North Carolina system</u>
(http://www.northcarolina.edu/). The UNC Board of Governors is the policy-making body legally charged with "the general determination, control, supervision, management, and governance of all affairs, of the constituent institutions."

NC State is a member of the National Association of State Universities and Land-Grant Colleges. It is also a member of the American Council on Education, the College Entrance Examination Board, the Council of Graduate Schools, the National Commission on Accrediting and the Southern Association of Colleges and Schools.

NC State University is accredited by the <u>Commission on Colleges of the Southern Association of Colleges and Schools</u> (http://www.sacscoc.org/) to award associate's, baccalaureate, master's, and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of NC State University. We are providing this contact information here to enable interested constituents (1) to learn about the accreditation status of NC State, (2) to file a third-party comment at the time of NC State's decennial review, or (3) to file a complaint against the institution for alleged non-compliance with a standard or requirement. Normal inquiries about NC State, such as admission requirements, financial aid, educational programs, etc., should be addressed directly to the university and not the Commission's office.

Executive Officers (https://leadership.ncsu.edu/)
Board of Trustees (https://leadership.ncsu.edu/board-of-trustees/)
UNC Board of Governors (http://www.northcarolina.edu/apps/bog/members.htm)

The Graduate School

Graduate instruction was first offered at North Carolina State University in 1893, and the first doctoral degree was conferred in 1926. In the ensuing years, the Graduate School has grown steadily and now provides instruction and facilities for advanced study and research in the fields of agriculture and life sciences, design, education, engineering, natural resources, humanities and social sciences, management, physical and mathematical sciences, textiles and veterinary medicine.

The Graduate School is currently composed of more than 2,400 graduate faculty members. Educated at major universities throughout the world and established both in advanced teaching and research, these scholars guide the University's more than 7,000 master's and doctoral students from all areas of the U.S. and many other countries. The faculty and students have available exceptional facilities, including libraries, laboratories, modern equipment and special research areas.

Additionally, a cooperative agreement exists among the Graduate Schools of the University of North Carolina at Chapel Hill, the University of North Carolina at Greensboro, Duke University, and North Carolina State University which increases the educational and research possibilities associated with each institution.

Application and Admissions

The criteria used for admissions decisions vary according to programs and schools/colleges, reflect an evaluation of the applicant's potential for graduate work, and consider the ability of a program to accommodate additional students. Commonly, departmental admissions committees consider requests for admission and forward their recommendations to the Graduate School. However, Graduate School regulations govern the criteria for the classification of graduate student status.

<u>Application (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/application/)</u>
<u>Application Deadlines (https://grad.ncsu.edu/programs/)</u>

English Proficiency Requirements (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/english-proficiency/)

Admission (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/admissions/lmmunization and Medical History (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/immunization/).

<u>Transcript Requirements (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/transcript-requirements/)</u>

Admission to Degree Programs

Full Graduate Status (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/full-graduate-status/). Provisional Admission (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/provisional-status/). Graduate Unclassified Status (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/graduate-unclassified-status/).

Admission for International Students (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/admission-for-international-students/)

<u>Post-Baccalaureate Studies (PBS) (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/post-baccalaureate-studies/)</u>

<u>Distance Education (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/distance-education/)</u>

<u>Evening Degree Programs (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/evening-degree-programs/)</u>

Alternative Teacher Education Programs (https://grad.ncsu.edu/students/rules-and-regulations/catalog/application-and-admissions/alternative-teacher-education-programs/)

Application

All applicants must submit the online NC State University Graduate School Application Form (http://www.ncsu.edu/applygrad). Application is made for a specific degree program and date of enrollment.

Applications for admission require the following:

Non-refundable application processing fee of \$75.00 (US) for U.S. citizens and Permanent Residents or \$85.00 (US) for Non-Resident Aliens (Internationals);

One unofficial transcript from all colleges and universities previously attended; (NOTE: Applicants currently attending, or who have previously attended NC State, are not required to provide an NC State transcript.)

Three recommendations from people who know the prospective student's academic record and potential for graduate study;

On-line North Carolina Residency Form if claiming NC residence for tuition purposes;

A list of courses in progress if enrolled as a Post-Baccalaureate Studies (PBS) student at NC State;

Depending on requirements of particular programs, GRE or other standardized test scores, statements of purpose, portfolios or other work samples; and

TOEFL scores, where applicable.

English Proficiency Requirements for International Students

In order to be eligible for admission to the graduate study at NCSU all international applicants, regardless of citizenship, must demonstrate proficiency in English at a level necessary to be successful in a graduate program at NC State. This requirement can be met for most applicants in one of the following ways; however, some programs may require additional evidence of English proficiency:

1. Provide <u>Test of English as a Foreign Language (https://www.ets.org/toefl)</u> (TOEFL) with a total score of **at least 80** on the Internet-based Test (iBT). Minimum test scores for each section:

Listening: 18 points Reading: 18 points Writing: 18 points

Speaking: 18 points for admission, 23 points for TA appointment where TA has direct verbal interactions with students, 26 points for TA appointment

where TA presents lectures in the class or laboratory

The maximum total score for the iBT is 120 with each section worth 30 points.

2. Provide <u>International English Language Testing System (https://www.ielts.org/)</u> (IELTS) scores with an overall band score of at least 6.5. Minimum test scores for each section are listed below:

Listening: 6.5 Reading: 6.5 Writing: 6.5

Speaking: 6.5 for admission, 7.0 for TA appointment

- 3. be a citizen of a <u>country where English is an official language (https://projects.ncsu.edu/grad/handbook/docs/official_language_english.htm)</u> and the language of instruction in higher education; or
- 4. have successfully completed at least one year of full-time study in a degree program at a four-year US College or university.
- 5. TOEFL or IELTS test date must be no older than two years (24 months) prior to the beginning of the requested entry term.

NOTE: The current computer- and paper-based versions of the TOEFL test will be given until the iBT version is implemented in a particular location. Computer-based TOEFL scores must be 213 or higher (with at least 17 on three sections and no section score below 13). The paper-based test requires a score of 550 or higher (with scores of 50 on at least two of the three sections and no section score below 45).

Admission

The procedures followed in evaluating an applicant's potential for success in graduate work and the criteria used for admissions decisions vary according to programs and colleges and reflect an evaluation of the applicant's potential to engage in graduate work and the capability of the individual programs to accommodate additional students. Most programs consider applications as they arrive, while others accumulate applications and make recommendations on admission at certain times during the year. Generally, requests for admission are considered by program admissions committees that forward the program recommendations to the Dean of the Graduate School.

Students are admitted to full or provisional status in a specific degree program. Admission is granted for a specific semester or summer term. Any change in the admission date must be requested in writing and approved by the program and Graduate School. Once the requirements for that degree program have been completed, no further registration as a graduate student will be permitted unless admission to a new graduate classification has been formally approved.

Immunization and Medical History

All graduate students admitted to a degree program are required by State law to submit a report of medical history and immunizations prior to initial registration. Both forms are available online through HealthWeb. This report must document immunization against tetanus/diphtheria, measles, German measles, polio, and for international students, show results of a tuberculin skin test. Graduate students who have recently completed their undergraduate work at NC State must update their medical history. Student Health Services (https://healthypack.dasa.ncsu.edu/) must receive the required reports at least 30 days before registration. If the student does not meet this requirement, dismissal from school is mandatory under the law.

Transcript Requirements

The University requires that official copies of transcripts that document all prior degrees be on file in the student's permanent record at NC State. Students are required to provide the Graduate School with official copies of their latest transcript(s) from all universities (official translation required for non-English transcripts) from which the applicant had any degrees awarded, no later than the last day of classes of the first semester they are enrolled.

Full Graduate Status

To be considered for admission in full graduate standing, an applicant must have a four-year bachelor's degree (or equivalent) from an accredited college or university as determined by a regional or general accrediting agency and must have at least a "B" (3.000/4.000) average in the undergraduate major or in the latest graduate degree program.

Exceptions on standard accreditation may be granted for applications with international degrees, including applicants with three-year degrees from institutions in Europe participating in the <u>Bologna Process (http://ec.europa.eu/education/policy/higher-education/bologna-process_en)</u>. A more complete discussion of the options for handling three-year bachelor's degrees can be <u>found here (https://grad.ncsu.edu/faculty-and-staff/three-year/)</u>.

Provisional Status

Students with bachelor's degrees from accredited institutions whose scholastic records are below the standards for admission to full graduate standing may be admitted provisionally when unavoidable, extenuating circumstances affected their undergraduate averages or when progressive improvement in their undergraduate work warrants provisional admission. Students admitted provisionally under these circumstances can attain full graduate standing after completion of nine or more graduate credit hours with a minimum GPA of 3.000. Courses taken for S/U grade cannot be used as part of the minimum.

Provisional admission may be granted to applicants with bachelor's degrees from accredited institutions who lack undergraduate work considered essential for graduate study in a major field. Applicants with bachelor's degrees from non-accredited institutions may be granted provisional admission when their academic records warrant this status.

Full graduate standing is granted when the deficiencies responsible for the provisional status are corrected through additional course work (without graduate credit), provided the student has maintained a satisfactory academic record (3.000 GPA) on all course work taken in a graduate classification. A change from provisional status to full graduate standing is effected only upon the recommendation of the department in which the student is seeking the degree.

A graduate student is not eligible for appointment to an assistantship or fellowship while on provisional status.

Graduate-Unclassified Status

The Graduate-Unclassified status is a temporary classification and students admitted to this status are not candidates for degrees. They may take courses for graduate credit but may not apply more than 12 credits earned while in this status to any program leading to an advanced degree at this institution. Unclassified graduate students are expected to meet the same admissions requirements that apply to graduate students in full standing. Any individual having an interest in applying for admission as a Graduate-Unclassified Student should correspond with the Graduate Dean describing his or her particular interests and objectives prior to making application.

Admission for International Students

International graduate students are admitted to either full-time study in a specific graduate program or into the Graduate-Unclassified category as an international visitor. In addition to admission requirements listed elsewhere for graduate admission, applicants who are not U.S. citizens must complete and submit a Visa Clearance Form and/or a Certificate of Financial Responsibility before a final admission decision can be made. Criteria for international visitors are as follows:

- 1. International student visitors must state their educational objectives at NC State and the time expected to accomplish those objectives (normally one semester or one academic year). The educational objective may not be to seek a graduate degree at NC State.
- 2. They are expected to meet the same minimum academic admission requirements that apply to graduate students in full standing.
- 3. They are expected to meet the same TOEFL requirements that apply to international students who are admitted to master's and doctoral programs if they plan to take courses. If they plan to register for research only, they are not required to take the TOEFL.
- 4. They must be recommended by the DGP of the program in which they plan to take courses or do research. Special admission status may apply for a period not to exceed one year.
- 5. They may hold a research assistantship but may not hold a teaching assistantship (provided their nonimmigrant status allows on-campus employment).
- 6. They will not be eligible for the Graduate Student Support Plan.
- 7. Those in F-1 or J-1 status must maintain full-time enrollment and all other requirements based on their particular nonimmigrant status.

Post-Baccalaureate Studies (PBS)

The <u>Post-Baccalaureate Studies (https://registrar.ncsu.edu/nds/)</u> (PBS) classification is designed for U.S. citizens or permanent residents who wish to undertake academic work beyond the bachelor's degree but who are not currently admitted to a degree program. This classification is not open to international students with the exception of the spouse of a regularly enrolled NC State student. In special cases where students are sponsored by an agency of the U.S. government for specialized, non-degree study, approval may be given by the Graduate School for registration in the PBS classification. The following rules apply to students who wish to register for PBS.

Please note that the following are university minimum requirements. Some departments may have more restrictive requirements.

- All must have bachelor's degrees from accredited institutions of higher education. Registration is through Registration and Records (https://registrar.ncsu.edu/).
- 2. All classes taken for credit by PBS students will be graded in the usual manner that applies for the particular course (A+ through F or S/U). All courses taken at NC State will appear on the student's transcript.
- 3. If the student is admitted as a graduate student, a maximum of 12 hours may apply toward the minimum university requirement of the master's degree (i.e., 30 credit hours) for which the student is enrolled, including hours approved for graduate credit while classified as a senior or unclassified graduate. The first 12 hours of course work taken at the graduate level in the PBS category will be accepted toward degree requirements unless a request for some other combination of 12 hours is made by the student's advisory committee and approved by the Graduate Dean. A maximum of 12 credit hours taken while in PBS status may be transferred into a doctoral degree program.
- 4. If a student's graduate degree is terminated, he/she cannot use courses taken in PBS status after termination for credit toward the same graduate degree program.
- 5. The grade point average (GPA) of a graduate student who has credits in the PBS category will be based on all courses taken at the 400-800 level. However, no course taken six (6) years prior to graduation from a program can be used to meet the requirements for a later graduate degree at NC State.
- 6. Registration is limited to a maximum of two courses per semester. Individuals who are employed full-time should limit their PBS registrations to one course per semester.
- 7. The PBS classification carries with it no implication that the student will be admitted to the Graduate School in any degree classification.
- 8. All course work accepted for degree credit must be approved by the student's advisory committee as being germane to the program. Requests for degree credit for courses completed in the PBS classification are considered after admission to a graduate degree program when the student's Plan of Graduate Work is filed with the Graduate School.
- 9. PBS students are expected to familiarize themselves with Graduate School and departmental policies and to seek further advice or clarification as needed.

Distance Education

Distance learning offers you the opportunity to participate in a different learning environment by allowing students to have instruction off campus. Valuable learning time is gained by providing an educational environment that increases accessibility and flexibility for learners.

NC State's distance learning includes some Internet-based courses, but also offers study through the use of videotape, cable TV, interactive TV, satellite, and independent study programs. In addition, <u>Distance Education (https://online-distance.ncsu.edu/)</u> courses require more writing than in a traditional classroom setting via electronic participation. On-line discussions and e-mail communications allow regular involvement by all students, not just a few.

Distance Education Programs

NC State offers credit courses on a vast number of subjects, with more than 100 individual distance education courses to choose from in the humanities, engineering, social sciences, textiles, physical sciences, and more.

Degree programs require admission to the university. Since each program sets its own admission requirements, students should contact the program of their interest for details. A full listing of programs is available on the Distance Education website.

Professional development courses are also available through Distance Education; all are for-credit offerings designed to meet the professional development needs of specific audiences. No admission to the university is required.

Other options include non-credit and continuing education programs such as short courses, computer training, or customized programs for businesses and other groups. No admission to the university is required to enroll in these programs.

(Note: There may be additional fees associated with student identity verification for distance education students who take remotely proctored exams.)

Evening Degree Programs

Some graduate degree programs offer late afternoon and evening courses for students who are unable to attend classes during the day. These students may also have the option of earning their degree through <u>Distance Education (https://online-distance.ncsu.edu/)</u>. For further information about these programs, students should contact the specific department.

Alternative Teacher Education Programs

Alternative teacher education programs (https://ced.ncsu.edu/nc-teach/) are for people with a desire to teach in elementary, middle, or high schools but do not have an undergraduate degree in education. Please note that all alternative licensure programs at NC State require a minimum GPA of 2.500 and a four-year degree from an accredited college or university. There are two types of alternative licensure: licensure only and lateral entry.

Licensure only programs are for people who want to complete their teaching license ("A"-level) before entering the classroom. These programs include education coursework, content-specific coursework, and student teaching.

Lateral entry programs are for people who want to work on their coursework while teaching full-time. Lateral entry programs include education coursework, content-specific coursework, and a one-hour practicum in place of student teaching. Participants in lateral entry programs will receive a lateral entry license when they are hired in a teaching position and then will be recommended for a clear ("A"-level) license upon completion of the lateral entry program. NC TEACH is not a graduate program. The NC TEACH program is an intensive one-year program in which participants enter as a cohort and are provided with an extensive support network to aid their transition into the classroom.

Also see Teacher Licensure programs offered through Distance Education.

Graduate Programs

The Graduate School offers programs of study leading to both master's and doctoral degrees. Graduate education is the final stage in the development of intellectual independence. It is different from undergraduate education in that the student is encouraged to establish premises, to hypothesize and to defend both the procedure and the conclusions of independent investigation. Emphasis is placed upon the student's scholarly development through formal course work, seminars, research and independent investigation.

Each student's program is planned with an advisory committee of graduate faculty members to provide the opportunity for gaining advanced knowledge in the particular field of study. It is the responsibility of ALL graduate students to know and understand their degree requirements. Students are responsible for the fulfillment of those requirements.

Master's Degree Programs

Master of Science and Master of Arts Degrees (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/master-of-science-and-master-of-arts/).

Master's Degree in Designated Field (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/masters-degree-in-a-designated-field/).

Option B Master's Degree (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/option-b-masters-degree/).

<u>Transfer Credits (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/transfer-credits/)</u>

Advisor and Advisory Committee (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/masters-advisor-and-advisory-committee/)

Plan of Work (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/plan-of-work/).

Language Requirements (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/language-requirement/).

Minor (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/minor/)

Co-Major (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/co-major/)

Comprehensive Examinations (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/masters-comprehensive-examination/)
Thesis (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/thesis/)

Time Limit (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/time-limit/)

Summary of Master's Procedures (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/summary-of-masters-procedures/).

Doctoral Degree Programs

<u>Doctor of Philosophy and Doctor of Education Degrees (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/doctor-of-philosophy-and-doctor-of-education-degrees/)</u>

Residence Credits (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/residence-credits/).

Advisor and Advisory Committee (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/doctoral-advisor-and-advisory-committee/)

Plan of Work (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/doctoral-plan-of-work/)

Co-Major (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/doctoral-co-major/).

Candidacy (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/candidacy/)

Comprehensive Examinations (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/doctoral-comprehensive-examinations/)

<u>Dissertation (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/dissertation/)</u>

Time Limit (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/doctoral-time-limit/)

Summary of Doctoral Procedures (https://grad.ncsu.edu/students/rules-and-regulations/catalog/graduate-programs/summary-of-doctoral-procedures/),

Master of Science and Master of Arts

All Master of Science and Master of Arts degree programs are planned with the objective of making possible a reasonable, comprehensive mastery of the subject matter in a chosen field. In most cases, the Master of Science and Master of Arts programs provide training and experience in research in order to familiarize the student with the methods, ideals and goals of independent investigation. In these cases, representative of most Master of Science and Master of Arts degree programs, a thesis is required. A small number of Master of Science and Master of Arts programs do not require a thesis.

Requirements

- 1. A minimum of 30 semester hours of graduate work in the degree program, unless the specific program requires more hours. (See also Credit Hour Requirements for Master's Degrees in the Graduate Handbook.)
- 2. A reading knowledge of a foreign language (in a few programs)
- 3. A comprehensive written examination (in some programs)
- 4. A thesis (in most programs)
- 5. A comprehensive oral examination (except Option B programs)

Time Limit

Requirements for ALL master's degrees must be completed within six (6) calendar years. For further information about the time limit for degrees, please see Graduate Handbook Section 3.4.

Master's Degree in a Designated Field

A number of departments and programs offer master's degrees in designated fields. These are professional degrees and do not require a thesis.

Requirements

- 1. A minimum of 30 semester hours of graduate work in the degree program (unless the specific program requires more hours).
- 2. A comprehensive written examination (in some programs)
- 3. A comprehensive oral examination (except Option B programs)

Option B Master's Degree

The Option B Master's degree requires that students adhere to the general guidelines for a Master of Arts or Master of Science degree with the following exceptions:

- 1. A comprehensive oral exam is not required
- 2. A thesis is not required
- 3. Departmental research credit hours will not be included as part of the course work
- 4. Individual departments define other requirements for their Option B program, such as additional course work or final projects
- 5. Option B Master's degree programs may not carry an officially designated minor
- 6. Students have a single assigned advisor rather than an advisory committee.

Transfer Credits

Transfer of graduate credits earned at other universities

A course that was completed at another college or university may be considered for transfer to a master's program provided that (1) the course is classified as a graduate course; (2) it was completed while the student was in a graduate or post-baccalaureate classification; (3) it was not taken as part of a previous master's degree program at another institution; (4) the grade in the course is B or better (courses with grades of B- or lower will not be allowed to transfer); and (5) the college or university is accredited by one of the following six U.S. regional accrediting agencies: the Southern Association of Colleges and Schools, the Middle States Association of Colleges and Schools, the New England Association of Colleges and Schools, the Northwest Association of Colleges and Schools, or the Western Association of Colleges and Schools.

Transfer of graduate credits earned while enrolled in an undergraduate program at NC State University

A course that was completed while the student was enrolled as an undergraduate at NC State University may be considered for transfer to a master's program provided that (1) it is at the 400 level or higher; (2) the grade is B or better (courses with grades of B- or lower will not be allowed to transfer); (3) it was not counted to fulfill undergraduate requirements; and (4) it is recommended by the Director of Graduate Programs at the time of the student's enrollment in the Graduate School. Students admitted to the Accelerated Bachelor's/Master's program may use up to 12 hours of graduate credit to satisfy requirements for both the bachelor's and the master's degrees. No graduate credit will be allowed for a course completed in an undergraduate classification at another institution.

Transfer of graduate credits earned while enrolled in a previous graduate degree program at NC State University

A graduate course that was completed while the student was enrolled in a previous graduate program at NC State University may be considered for transfer to a master's program provided that (1) it is at the 500 level or higher; and (2) the grade is B or better (courses with grades of B- or lower will not be allowed to transfer).

Transfer of Post-Baccalaureate Studies (PBS) graduate credits earned at NC State University

A graduate course that was completed while the student was enrolled in PBS status at NC State University may be considered for transfer to a master's program provided that (1) it is at the 500 level or higher; and (2) the grade is B or better (courses with grades of B- or lower will not be allowed to transfer). All PBS credits that are used to satisfy requirements of a specific master's degree must be earned before the student is admitted to that degree program. A maximum of 12 credit hours taken while in PBS status may be transferred into a master's degree program. If a student's graduate degree program is terminated, he/she cannot use courses taken in PBS status after termination for credit toward the same graduate degree program.

Master's Advisor and Advisory Committee

All students in graduate programs must have a graduate advisor who is a member of the graduate faculty in the student's major program and is appointed by the Dean of the Graduate School upon recommendation of the Director of Graduate Programs (DGP). In the case of master's programs requiring theses and/or final oral examinations, the graduate advisor serves as chair or co-chair of the committee.

The primary function of the committee is to advise the student in all aspects of the educational program and to monitor and evaluate that student's progress toward the degree. The committee should provide an intellectually stimulating foundation for the student's professional and scholarly development and should be sensitive to any difficulties in the student's progress, research performance or methodology requiring attention. The committee certifies whether the student has met NC State's standards for a graduate degree. Advising and guiding the student on how best to qualify for the requirements of a degree is a key part of this responsibility.

In all master's programs except those designated "Option B," the committee will consist of at least three NC State Graduate Faculty members, one of whom is designated as chair and one of whom represents the minor if one has been declared. Those master's programs designated "Option B" require that the student choose only a major advisor or co-advisors but no committee.

Plan of Work

Master's students are required to submit a conditional Plan of Work (POW) in consultation with their advisor/advisory committee by the time they have completed one half of the credits required for the degree. The POW is submitted online through MyPack Portal.

The final POW submitted to the Graduate School must be approved by (1) members of the advisory committee for programs with a required thesis, or the major professor for Option B students; and (2) the Director of the Graduate Program. The approved POW must be submitted electronically by the DGP to the Graduate School.

Language Requirement

Requirements for Master of Arts and Master of Science Students

A reading knowledge of one modern foreign language (Germanic, Romance or Slavic) is required by some programs for the Master of Science and Master of Arts degrees. Other programs may designate that the language requirement be filled from among those languages in which the Department of Foreign Languages and Literatures conducts testing. Students should contact the major program for specific language requirements.

Master's Degrees in Designated Fields

There is no language requirement in the professional master's degree programs (master's degrees in designated fields) with the exception of the Master's of International Studies, which requires knowledge of one foreign language at a level of conversational proficiency.

Minor

The Graduate School does not require a minor, though individual programs may require one. If a program does not require a minor, the graduate student has the option of choosing one, except in an Option B Master's program. The minor work will usually be from a single discipline or field that in the judgment of the advisory committee provides relevant support to the major field. However, the committee has the alternative of developing an interdisciplinary minor if it best serves the needs of the student. When a student does select a minor, the advisory committee must include a representative of the minor field. The minor credits on the Plan of Graduate Work must be approved by the graduate advisory committee member representing the minor, and, in some cases, the DGP from the minor program.

Co-Major

Students may co-major at the master's level in programs with identical degrees, although the degrees do not necessarily have to have identical requirements, e.g., two master of science programs, one with a thesis requirement and one without. Students must obtain the approval of both graduate programs as well as appropriate representation on the advisory committee, and must meet all requirements of both programs. Students who co-major are not required to declare a minor. Co-majors must meet all requirements for majors in both programs. One degree is awarded and the co-major is noted on the transcript.

Master's Comprehensive Examination

Written Examination

Written examinations covering the subject matter of the major and the minor may be required. Information concerning written examination schedules should be obtained from the student's program.

Oral Examination

Candidates for master's degrees, except those in Option B programs, must pass a comprehensive oral examination to demonstrate to the advisory committee that he/she possesses a reasonable mastery of the subject matter of the major and minor fields and that this knowledge can be used with promptness and accuracy. This exam takes the form of a traditional defense of the thesis in those programs requiring theses. In programs that require a thesis, the thesis must be submitted in complete form, except for such revisions which may be necessary as a result of the final oral exam, to all members of the advisory committee at least two (2) weeks prior to the exam.

Failure of a student to pass the oral examination terminates the student's graduate work at NC State unless the graduate advisory committee unanimously requests that the Graduate School permit a re-examination. Only one re-examination will be given.

Oral examinations where one or more of the participants are located remotely from the others may occasionally become necessary, but they should never be normal practice. If such circumstances arise, please see Section 3.6 of the Graduate Handbook for rules requesting and conducting a remote exam.

Thesis

Candidates for the Master of Arts or Master of Science degrees in programs requiring a thesis must undertake an original investigation into a subject, which has been approved by the student's advisory committee and Director of Graduate Programs, and prepare a thesis. Information on form and organization of the thesis, in addition to other regulations, is presented in the Graduate School's <u>Electronic Thesis and Dissertation Guide</u> (https://grad.ncsu.edu/students/etd/l.

Time Limit

All requirements for the master's degree must be completed within six calendar years, beginning with the date the student commences courses carrying graduate credit applicable to the degree program, unless a more restrictive time limit has been established by the academic college/school or program. The term limit remains at six (6) years even if a student was on approved leave of absence during the six-year period. For further information about the time limit for degrees, please see Graduate Handbook Section 3.4.

Summary of Master's Procedures

All Master's Students

- 1. Application materials and required fees received.
- 2. Application materials reviewed by graduate program.
- 3. Graduate program forwards recommendation regarding applicant's admissibility to the Dean of the Graduate School.
- 4. The Dean of the Graduate School reviews the recommendation and the student is notified of the action taken on the request for admission.
- 5. Outstanding transcripts, if any, showing any or all post-secondary coursework attempted and degree(s) conferred since application should be submitted by student to the Graduate School, prior to matriculation.
- 6. Student arrives, reports to the graduate program, is assigned a graduate advisor and develops a roster of courses and credits with the advisor.
- 7. Student subject to continuous registration policy until graduation.
- 8. Student approves Patent Agreement via Student Self-Service in the MyPack portal.
- 9. Student develops a Plan of Graduate Work, in consultation with and the approval of his/her graduate advisor and Director of Graduate Programs (DGP). The Plan of Work must be submitted via SIS to the Graduate School, where graduate records staff will review it and advise the program of any changes that need to be made before the Request for a Permit to Schedule the Master's Oral Examination or Request for Option B Graduation Checkout can be approved by the Graduate School.
- 10. Student passes language examination, if required.
- 11. Student passes written examination, if required.
- 12. Student submits Diploma Order Request form by end of third week of the semester or summer session of anticipated graduation.
- 13. A GPA of at least 3.000 for the degree requirements as well as on overall graduate course work at NC State is required for graduation.
- 14. All degree requirements must be completed within six calendar years, beginning with the date the student takes courses carrying graduate credit applicable to the degree program, unless a more restrictive time limit has been established by the program or academic college/school.

Students in Thesis Programs

- 1. Graduate advisory committee of three or more graduate faculty members is appointed by the DGP.
- 2. A preliminary copy of the thesis is submitted to the chair of the student's advisory committee.
- 3. When all requirements except completion of the course work in the final semester are satisfied and after the thesis is complete except for such revisions as may be necessary as a result of the exam, the DGP submits to the Graduate School the Request for a Permit to Schedule the Master's Oral Examination.
- 4. If Graduate School requirements are met, the Request for a Permit to Schedule the Master's Oral Examination is approved by the Graduate School within 10 working days of receipt of the request, and the permit, Admission to the Final Master's Oral Examination, is issued.
- 5. At least two weeks prior to the final oral examination, the chair of the student's advisory committee submits the thesis, if required, to the other members of the advisory committee for review.
- 6. Final examination is scheduled and conducted.
- 7. The Admission to the Final Master's Oral Examination form is completed by the committee members, including date and result, and submitted to the Graduate School by the DGP. The Graduate School should receive the report within five working days of the examination.
- 8. Student submits three copies of the thesis, signed by each member of his/her advisory committee, to the Graduate School.
- 9. The deadline for submitting the thesis to the Graduate School in order for the student to graduate in a given semester or summer session appears in the Graduate School Calendar.

10. The thesis is reviewed by the Graduate School to ensure that the format conforms to the specifications prescribed in the Thesis and Dissertation Guide.

Students in Master's of Discipline Non-Thesis Programs

- 1. Graduate advisory committee of three or more graduate faculty members is appointed by the DGP.
- 2. When all requirements except completion of the course work in the final semester are satisfied, DGP submits to the Graduate School the Request for a Permit to Schedule the Master's Oral Examination.
- 3. If Graduate School requirements are met, a Request for a Permit to Schedule the Master's Oral Examination is approved by the Graduate School within 10 working days of receipt of the request and the permit, Admission to the Final Master's Oral Examination, is issued.
- 4. Final examination is scheduled and conducted.
- 5. Final examination report, including date and result of the examination, submitted to the Graduate School by the DGP. The Graduate School should receive the report within five working days of the examination.
- 6. The deadline date for unconditionally passing the final examination in order for the student to graduate in a given semester or summer session appears in the Graduate School Calendar.

Students in Option B Programs

DGP submits requests for graduation checkout to the Graduate Dean no later than six weeks after the first day of the semester (seven working days after the first day of the summer session) in which the student is taking the last course in his or her program and anticipates graduation.

Doctor of Philosophy and Doctor of Education Degrees

The doctorate symbolizes the ability of the recipient to undertake original research and scholarly work at the highest levels without supervision. The degree is therefore not granted simply upon completion of a stated amount of course work but rather upon demonstration by the student of a comprehensive knowledge and high attainment in scholarship in a specialized field of study. The student must demonstrate this ability by writing a dissertation reporting the results of an original investigation and by passing a series of comprehensive preliminary examinations in the field of specialization and related areas of knowledge, and successfully defending the dissertation.

Requirements

- 1. At least two residence credit points secured in continuous semesters' residence as a graduate student at the University.
- 2. Doctoral degrees at North Carolina State University require a minimum of 72 graduate credit hours beyond the bachelor's degree. For a student who has a master's degree from a university other than NC State, a maximum of 18 hours of relevant graduate credit from the master's degree may be applied toward this minimum, upon the recommendation of the student's Graduate Advisory Committee. If a student completes a master's degree at NC State and continues for a doctoral degree without a break in time, up to 36 credit hours taken while in master's status may be used to meet minimum requirements for the doctoral degree.
- 3. A preliminary comprehensive examination (written and oral components)
- 4. A dissertation
- 5. A final comprehensive oral examination
- 6. Dissertation defense.

Residence Credits

A student working toward a doctoral degree is expected to be registered for graduate work at NC State for at least six (6) semesters beyond the bachelor's degree. The University has basic residence requirements, as defined below, but the academic schools/colleges have the prerogative of establishing more restrictive requirements within the respective schools/colleges. Residence credit is determined by the number of semester hours of graduate work carried during a regular semester.

The Plan of Work should include both a list of the course work to be undertaken (in all programs) and the dissertation topic; be developed by the student and his/her advisory committee; be approved by the committee and the Director of Graduate Programs or Department Head prior to submission to the Graduate School for final approval; be submitted prior to completion of 12 hours of a doctoral program.

At least two residence credits are necessary in continuous residence (registration in consecutive semesters) as a graduate student at the University, but failure to take courses in the summer does not break continuity.

Semester Credits (Hours)	Residence Credits
9 or more	1
6-8	2/3
less than 6 (including registration in 590, 690 series)	1/3

Summer Residency

Summer course work, however, can be used in partial fulfillment of this requirement. A single summer session is equal to one-half of the corresponding amount for a regular semester. For example, six semester hours carried during a summer session will earn one-third of a residence credit; less than six credit hours will earn one-sixth of a residence credit.

Doctoral Advisor and Advisory Committee

All students in graduate programs must have a graduate advisor who is a member of the Graduate Faculty in the student's major program and is appointed by the Dean of the Graduate School upon recommendation of the DGP. The graduate advisor serves as chair or co-chair of the committee.

The primary function of the committee is to advise the student in all aspects of the educational program and to monitor and evaluate that student's progress toward the degree. The committee should provide an intellectually stimulating foundation for the student's professional and scholarly development and should be sensitive to any difficulties in the student's progress, research performance or methodology requiring attention. The committee certifies whether the student has met NC State's standards for a graduate degree. Advising and guiding the student on how best to qualify for the requirements of a degree is a key part of this responsibility.

A doctoral student's committee will consist of at least four NC State graduate faculty members, one of whom represents the minor field if a minor has been declared. The committee is indicated on the Plan of Graduate Work. In this way, the committee is officially recommended by the DGP, and must be approved by the Graduate School at the time of the approval of the Plan of Graduate Work.

Doctoral Plan of Work

Doctoral students are required to complete a Plan of Work (POW) in consultation with their advisors. The POW is submitted online through MyPack Portal. The doctoral POW, including the courses to be undertaken in the student's program and the dissertation topic, should be prepared by the doctoral student and his/her advisory committee and submitted electronically to the Graduate School. The POW as a whole should be rationally unified, with all constituent parts contributing to an organized plan of study and research, and courses must be selected from groups embracing one principal subject of concentration, the major, with the option of designating courses in a cognate field, the minor. When a student elects to designate a minor, he/she should select the minor course work from a discipline or field that, in the judgment of the advisory committee, provides relevant support to the major field.

The POW should include both a list of the course work to be undertaken (in all programs) and the dissertation topic; be developed by the student and his/her advisory committee; be approved by the committee and the Director of Graduate Programs or Department Head prior to submission to the Graduate School for final approval; be submitted prior to completion of 12 hours of a doctoral program.

Doctoral Co-Major

Students may co-major at the doctoral level with the approval of both programs and with the appointment of a co-chair from each program on the advisory committee. The co-chairs will have equal responsibilities for directing and mentoring the student. Co-majors are not permitted between Doctor of Philosophy and Doctor of Education degree programs. Co-majors must meet all requirements for majors in both programs. One degree is awarded and the co-major is noted on the transcript.

Candidacy

A doctoral student is admitted to candidacy by the Graduate School upon passing the preliminary examinations without conditions or after fulfilling any conditions specified by the advisory committee.

Doctoral Comprehensive Examinations

Preliminary Examinations

Each doctoral student is required to take preliminary or comprehensive examinations, consisting of written examinations and an oral examination, not earlier than the end of the second year of graduate study and not later than one semester (four months) before the final oral examination.

Written examination questions may cover any phase of the course work taken by the student during graduate study or any subject logically related to an understanding of the subject matter in the major and minor areas of study. The questions are designed to measure the student's mastery of his/her field and the adequacy of preparation for research. Committee members must notify the Director of Graduate Programs when a student has completed the written examination. Failure to pass the written portion terminates the student's work at this institution, subject to departmental and/or school/college policies with respect to reexamination.

Upon satisfactory completion of the written portion of the preliminary examinations and after completion of all course work relevant to the examination, the student submits a Request to Schedule the Doctoral Oral Examination, indicating that he/she wishes to schedule the preliminary examination.

The preliminary oral examination is conducted by the student's advisory committee and the Graduate School Representative and is open to all graduate faculty members. The Graduate School will notify the student and the examining committee. The oral examination is designed to test the student's ability to relate factual knowledge to specific circumstances, to use this knowledge with accuracy and promptness and to demonstrate a comprehensive understanding of the field of specialization and related areas.

A unanimous vote of approval by the members of the advisory committee is required for the student to pass the preliminary oral examination. Approval may be conditioned, however, on the successful completion of additional work in some particular field(s). All committee actions may be appealed by written application to the Graduate Dean (refer to NC State policy on grievance procedures for students).

Failure to pass the preliminary oral examination terminates the student's work at this institution unless the examining committee recommends a reexamination. No reexamination may be given until at least one full semester has elapsed, and only one reexamination is permitted in a given doctoral program.

Final Oral Examination

As with the preliminary oral examination, the chair of the student's advisory committee is in charge of conducting the final oral examination. The final oral examination is scheduled after the dissertation is complete except for such revisions as may be necessary as a result of the examination, but not earlier than four calendar months after admission to candidacy and not before all required course work has been completed or is currently in progress.

The examination consists of the candidate's defense of the methodology used, the data collected, and the conclusions reached in the research, as reported in the dissertation. It is conducted by an examining committee, which consists of the student's advisory committee and a Graduate School Representative. This examination is open to the University community.

While the chair has the option of allowing visitors to ask questions of the candidate, the chair also has the obligation to maintain a scholarly atmosphere and to keep the student's best interest foremost. Graduate faculty members who are not on the advisory committee will have the opportunity to express their opinions to the committee in the absence of the student. However, the final deliberations and the vote are private to the examining committee.

A unanimous vote of approval of the advisory committee is required for passing the final oral examination. Approval may be conditioned, however, on the student's meeting specific requirements prescribed by the student's advisory committee. Failure of a student to pass the examination terminates his or her work at this institution unless the advisory committee recommends a reexamination. No reexamination may be given until one full semester has elapsed and only one reexamination is permitted.

Oral examinations where one or more of the participants are located remotely from the others may occasionally become necessary, but they should never be normal practice. If such circumstances arise, please see Section 3.6 of the Graduate Handbook for rules for requesting and conducting a remote exam.

Dissertation

The doctoral dissertation is the document presenting the results of the student's original investigation in the field of primary interest. It must represent a contribution to knowledge, adequately supported by data, and be written in a manner consistent with the highest standards of scholarship. Publication is expected and encouraged.

The dissertation will be reviewed by all members of the advisory committee and must receive their approval prior to submission to the Graduate School. Information on the required form and organization of the dissertation, in addition to other regulations, is presented in the Graduate School's Electronic Thesis and Dissertation Guide (https://grad.ncsu.edu/students/etd/). At the time of the dissertation's submission to the Graduate School, the student is also required to submit one copy each of the Survey of Earned Doctorate form and University Microfilms International Agreement form and to complete a brief, standard questionnaire about his or her experience as a graduate student at NC State. The University also requires that all doctoral dissertations be microfilmed by University Microfilms International, Ann Arbor, MI, including the publication of the abstract in Dissertation Abstracts International. The student pays the cost of this service.

Doctoral Time Limit

Doctoral students must attain candidacy for the degree within six (6) calendar years. All degree requirements must be completed within 10 calendar years. For further information about the time limit for degrees, please see Graduate Handbook Section 3.4.

Summary of Doctoral Procedures

- 1. Application materials and required fee received.
- 2. Application materials reviewed by graduate program.
- 3. Graduate program forwards recommendation regarding applicant's admissibility to Graduate Dean.
- 4. The graduate program's recommendation is reviewed and the student is notified of the action taken on the request for admission.
- 5. Outstanding transcripts, if any, showing any or all post-secondary coursework attempted and degree(s) conferred since application should be submitted by student to the Graduate School, prior to matriculation.
- 6. If admitted, the student arrives, reports to the graduate program, is assigned an advisor and makes out a roster of courses in consultation with the departmental advisor and Director of Graduate Programs (DGP).
- 7. Advisory committee of at least four NC State Graduate Faculty members, one of whom is designated as the chair and one of whom represents the minor field (where appropriate), is appointed by the Graduate Dean upon the recommendation of the DGP. The Graduate Dean also selects a graduate faculty member to serve as the Graduate School Representative on the student's committee.
- 8. Student approves Patent Agreement via Student Self-Service in the MyPack portal.
- 9. A dissertation subject is selected and an outline of the proposed research is submitted to the student's advisory committee and the DGP for review and approval.
- 10. Plan of Graduate Work is prepared by the advisory committee with the student, is approved by the DGP, and is submitted to the Graduate School for approval as soon as feasible after completion of 12 hours of course work.
- 11. Written examinations in the major and minor fields are scheduled no earlier than the end of the second year of graduate study and not later than one semester before the final oral examination. The results of these examinations will be reported to the Graduate School.
- 12. When all written examinations have been completed satisfactorily, the chair submits the Request for Approval to Schedule the Doctoral Oral Examination, designating the preliminary oral examination, at least two weeks prior to the suggested date. Upon approval of the request, the student and examining committee are notified of the time and place. The DGP sends the report of the exam to the Graduate School and if the exam is passed without conditions, the student is admitted to candidacy.
- 13. A copy of the preliminary draft of the dissertation is submitted to the chair of the student's advisory committee for review.
- 14. The Diploma Order Request Form must be filed with the Graduate School by the end of the sixth week of the semester or summer session of anticipated graduation. Failure to submit the form by this date may result in the student's failure to receive the diploma at graduation.
- 15. At least two weeks prior to the final oral examination, the chair of the student's advisory committee submits the dissertation to advisory committee members for review.
- 16. Four calendar months after admission to candidacy or later, and after the dissertation is complete except for such revisions as may be necessary as a result of the final exam, the chair submits to the Graduate School the Request for Approval to Schedule the Doctoral Oral Examination, designating a request for permission for the candidate to take the final oral exam. Requests should be filed at least two weeks before the date of the examination. Upon approval of the request, the student and the examining committee, including a Graduate School representative, are notified of the time and place of the examination. The Graduate School Representative receives a copy of the dissertation at least one week prior to the examination.
- 17. The Graduate School requires that all theses and dissertations be properly submitted electronically following the requirements in the Electronic Thesis and Dissertation (ETD) website. Specific deadlines for each semester, as well as formatting requirements, are posted in the online Thesis and Dissertation Guide, located on the ETD website.
- 18. The dissertation is reviewed by the Graduate School to ensure that the format conforms to the specifications prescribed in the Thesis and Dissertation Guide.
- 19. All students must apply to graduate before the semester deadline via MyPack Portal in order to be placed on the graduation list, have the name printed in the graduate programs, have the diploma ordered and the transcript posted.
- 20. All course work scheduled in a graduate degree classification must be completed prior to graduation.

- 21. A GPA of at least 3.000 is required for graduation.
- 22. All degree requirements must be completed within 10 calendar years, beginning with the date the student commences courses carrying graduate credit applicable to the degree program, unless a more restrictive time limit has been established by the program or academic college/school.

Registration

The <u>Department of Registration and Records (https://registrar.ncsu.edu/)</u> must have authorization from the Graduate School before a graduate student in any classification will be permitted to register for classes. This authorization will be sent to the Department of Registration and Records at the time the student is notified of acceptance for graduate study. All students attending classes must be registered for credit or audit. Grade records are furnished the students at the end of each scheduled school term.

Full-time/Part-time Determination for Graduate Students (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/full-part-time/)

Accelerated Bachelor's/Master's Degree Program (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/abm/)

Continuous Registration (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/continuous-registration/)

<u>Course Numbering (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/course-numbering/)</u>

<u>Grading and Academic Standing (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/grading-and-academic-standing/).</u>

Audits (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/audits/)

Graduation (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/graduation/)

<u>Diplomas (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/diplomas/)</u>

Interinstitutional Registration (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/interinstitutional-registration-program/)

<u>Cooperating Raleigh Colleges (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/cooperating-raleigh-colleges/)</u>

Academic Common Market (https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/academic-common-market/)

Full-Time/Part-Time Determination for All Graduate Students

NC State uses a uniform Academic Load Schedule of Full-Time Status of Graduate Students for Loan Deferment, Financial Aid, Visa Status, Payroll Tax Withholding, Graduate Student Support Plan Eligibility and Veteran's Benefits Purposes. This schedule will be the only resource used to determine a student's status for these purposes. These definitions apply to all graduate students, U.S. and international, participants and non-participants in the Graduate Student Support Plan. (updated on July 15, 2014)

Fall and Spring Semesters

Graduate students enrolled in degree plans requiring a thesis or dissertation

Full Time

These students will be full time if they take at least 9 hours per semester until the semester in which a course load of less than 9 credit hours will reach an accumulated total equal to the minimum number of hours required by their program. They should then register for that number of credits, but not less than 3. From that point on, they will continue to be considered full time until they complete their thesis or dissertation, as long as they enroll for at least 3 credit hours.

Half Time

Should a graduate student in a plan requiring a thesis or dissertation fail to maintain full-time status in any given term, as here defined, they are subject to the requirements governing students in non thesis or dissertation plans (as outlined below) in order to be certified as "Half Time".

Graduate students enrolled in degree plans not requiring a thesis or dissertation (1)

Full Time

These students will be full time if they take at least 9 hours in a given semester.

Half Time

These students will be half time if they take at least 4.5 hours per semester.

(1) Master's students enrolled in plans allowing both a thesis and a non-thesis option will be classified as "non-thesis" students and subject to these rules until such time as a graduate plan of work designating the thesis-option, is approved by the Graduate School.

Co-op Students

Co-op students registered for COP 500 will be considered full time. Students registered for only COP 501 will be considered half time.

Summer Sessions

Graduate students are not required by the University to be registered during the summer. However, students who receive a stipend but who are not enrolled in the University during a period of five weeks or more are subject to Social Security tax withholding. In particular, this means that Social Security taxes will be withheld from the paychecks of Graduate Research Assistants (RAs) who do not register in the summer. Specifically, Social Security taxes will be withheld in June for RAs who are not registered in Summer Session I and in July for RAs who are not registered in Summer Session II. The source of funds that pays the stipend must pay the same amount of Social Security tax as is withheld from the student's paycheck during these months.

Two special registration categories are available for Graduate Research Assistants who would not otherwise take courses in the summer: XYZ 696 (Summer Thesis Research) and XYZ 896 (Summer Dissertation Research), where XYZ represents the course prefix of a specific department or program. Each of these courses is for 1 hour of credit, with registration for 10 weeks, beginning the first day of Summer Session I. Social Security taxes will not be withheld from the June or July paychecks of RAs who register for either 696 or 896. Full time in the summer is a minimum of 1 hour.

Please note that student who are not registered during the summer do not have access to financial aid during that period, nor do they have access to the Student Health Service unless they pay the student health fee for each of the two summer sessions.

Waiver of Hours

Graduate students who meet certain prescribed special conditions, may be certified as either a full-time or half-time in cases where they do not meet the requirements for such as outlined above. A waiver of the uniform academic load rules requires attestation on behalf of the student by their committee chair, academic advisor or the Director of their graduate program and approval by the University.

Accelerated Bachelors/Masters Degree Program

The objective of the Accelerated Bachelors/Master's (ABM) degree program is to provide a means by which exceptional undergraduate students at NC State may complete the requirements for both the bachelor's and masters degrees at an accelerated pace. It provides an opportunity for exceptional undergraduate students at NC State to double count up to 12 graduate-level credits (500 or 700 level) and obtain a non-thesis master's degree within 12 months of completing the bachelor's degree or obtain a thesis based master's degree within 24 months of completing the bachelor's degree.

Students interested in the ABM Program should contact their department.

Continuous Registration

After a student is admitted to the Graduate School and enrolls for the first time, she/he is required to maintain continuous registration, i.e., be enrolled each semester, excluding summer sessions, until she/he has either graduated or her/his graduate program at NC State has been terminated. All students who graduate during the second summer session must be registered for either the first or second summer session.

Leave of Absence

A student in good academic standing who must interrupt her/his graduate program for good reasons may request a leave of absence from graduate study for a definite period of time not to exceed one year within a given graduate program. The request should be made at least one month prior to the term involved. Upon endorsement of the request by the student's graduate advisory committee and Director of Graduate Programs, and approval by the Graduate School, the student would not be required to be registered during the leave of absence. The time that the student spends on an approved leave of absence will be included in the time allowed to complete the degree, i.e., six (6) years for master's and ten (10) for doctoral.

Termination

Graduate students whose programs have been terminated because of failure to maintain continuous registration and who have not been granted a leave of absence during a fall or spring semester will be required to reapply for admission, and pay the admission fee (\$65.00 for US Citizens and Permanent Residents or \$75.00 for Non-Resident Aliens [Internationals]), if they wish to resume their graduate studies at NC State.

Adding Courses

Courses may be added during the first week of a semester, via MyPack Portal alone, or during the second week, via MyPack Portal and with permission of the instructor. In a summer session, courses may be added during the first two days via MyPack Portal alone, and/or during the third and fourth days via MyPack Portal with permission of the instructor. To add a student to a course after the deadline for adding courses, an instructor must submit a Schedule Revision Form (available in departmental office) to the School/College or Graduate Dean's approval.

Dropping Courses

All 500-800 level courses may be dropped through MyPack Portal without grades during the first eight weeks of a semester and during the first two weeks of a summer session. Students and advisors should consult the specific Registration and Records calendar for drop deadlines. Students should make schedule changes as early as possible in the semester. The number of hours for which a student is officially enrolled and upon which tuition and fees are based is that number in which the student is enrolled at the end of the second week of classes of a semester and at the end of the fifth day of a summer session (the last day to withdraw or drop a course with a refund). A Schedule Revision Form (available in departmental office) is required to drop a course after the deadline. No dropping of courses shall be allowed except for documented medical reasons or other verified, unforeseen grounds of personal or family hardship. Making such exceptions to policy requires the recommendation of the chair of the student's advisory committee, the Director of Graduate Programs or Department Head, and the Dean of the Graduate School. Courses may not be dropped after the final grades have been submitted by the instructor and processed by Registration and Records.

Dropping Minicourses

The drop date for a five-week minicourse is the last day of the third week of the mini-course. The drop date for a seven-week minicourse is the last day of the fourth week of the minicourse. Instructors teaching minicourses (courses which last only a portion of the semester) should announce at the outset of these courses their appropriate drop deadlines.

Course Numbering

Graduate-level courses are numbered at the 500, 600, 700 and 800 levels. Courses at the 500 level are available to advanced undergraduate students unless otherwise specified. Courses at the 700 and 800 level are doctoral courses and are open only to students in graduate or PBS standing. Exceptions may be made for undergraduate students in honors program and seniors in the ABM Program. Consent of the department is required for enrollment in all 600- and 800-level courses. Refer to the NC State University Courses Catalog for course descriptions and prerequisites.

Note: Courses at the 500 and 700 level are letter graded. Students cannot enroll in these courses for "credit only".

Grading and Academic Standing

The Grading System

NC State University uses the following grading system:

Grade	Grade Points/Credit Hour
A+	4.33
Α	4.00
A-	3.67
B+	3.33
В	3.00
B-	2.67
C+	2.33
С	2.00
C-	1.67
D+	1.33
D	1.00
D-	0.67
F	0.00

Grade Point Average (GPA)

The number of credit hours at the 400 level of higher that are attempted in a semester or summer session (for which regular grades are received) is divided into the total number of grade points earned to arrive at the grade point average. The cumulative and semester GPAs will include the effect of any A+ grades awarded (at 4 1/3 grade points) up to a grade point average of 4.000. The GPA will be calculated to three decimal points. Credits earned in PBS classification are also included in the GPA calculations and the determination of academic standing that become part of the Plan of Graduate Work.

Graduate Credit

To receive graduate degree credit, a grade of "C-" or higher is required in all courses taken after admission. Grades on courses taken for graduate credit as an undergraduate at NC State, in PBS classification, or transferred from other universities must have a grade of "B" or better to be transferred. All grades on courses numbered 400 and above taken in a graduate classification or for graduate credit as an undergraduate are included in the graduate GPA. Courses at the 300 level and below are not eligible for graduate credit and subsequently do not affect the graduate GPA. To graduate, a student must have a minimum 3.000 average on all graduate course work as well as all courses on his or her Plan of Graduate Work.

Graduate students who take 400-level courses that are letter graded do not have the option of taking the courses for "credit only" if they intend for the course to be part of their Plan of Graduate Work. It is appropriate for them to take selected 400-level letter-graded courses that are required by the program but will not be included in the Plan of Graduate Work for S-U grade. Examples would be 400-level courses in the student's major and FLE courses.

Grading of Graduate Courses

5XX: Letter Graded Master's Courses

6XX: S-U Graded Master's Courses

7XX: Letter Graded Doctoral Courses (ALL 7XX courses are restricted to the following classification of students (class MR, DR, SR, SP and GR) 8XX: S-U Graded Doctoral Courses (ALL 8XX courses with the exception of those specifically listed at the end of this section are restricted to the following classification of students class MR, DR, SR, SP and GR)

9XX: Professional Courses in the College of Veterinary Medicine are not graduate courses and may not be counted in Plans of Work for graduate degrees

NOTE: Courses at the 500 and 700 level are letter graded. Students cannot enroll in these courses for "credit only".

Incompletes

The grade of "IN" (Incomplete) may be given in any course at the discretion of the instructor for work not completed because of a serious interruption in the student's work not caused by their own negligence. An "IN" must not be used, however, as a substitute for an "F" when the student's performance in

the course is not passing. An "IN" is only appropriate when the student's record in the course is such that the successful completion of particular assignments, projects, or tests missed as a result of a documented serious event would enable that student to pass the course. Only work missed may be averaged into the grades already recorded for that student.

A student who receives an "IN" must complete the unfinished work to have the Incomplete converted to a final grade by the end of the next semester in which the student is enrolled, provided that this period is not longer than 12 months from the end of the semester or summer session in which the "IN" was received. Otherwise, the "IN" will be automatically converted to "F" or "U," in accord with the grading approved for the particular course. All grades of "IN" must be cleared prior to graduation. Students must not register again for any courses in which they have "IN" grades. Such registration does not remove "IN" grades, and the completion of the course on the second occasion will automatically result in an "F" for the incomplete course.

Except in the case of Interinstitutional Registration, grades on courses transferred from another institution will not be included in computing the GPA.

Grade Changes

When submitted to the Department of Registration and Records, end-of-course grades are final and not subject to change by reason of a revision of the instructor's judgment; nor are submitted grades to be revised on the basis of a second trial (e.g., a new examination or additional work undertaken or completed). Changes may only be made within one calendar year after the date final grades were submitted in order to correct an error of computation or transcribing or where part of the student's work has been unintentionally overlooked.

Academic Warning, Probation and Termination

Graduate students are given a notice of academic warning if they have accumulated 18 or fewer hours at the 400 level or above and have less than a 3.000 GPA. Graduate students are placed on academic probation if they have accumulated more than 18 hours at the 400 level or above and have a GPA in the range of 2.667 to 2.999 and will be ineligible for financial aid or appointment or reappointment to an assistantship or fellowship. A student's graduate study is terminated if they have accumulated more than 18 hours at the 400 level or above and have a GPA below 2.667 or if they have accumulated 30 or more hours and have less than a 3.000 GPA. "Accumulated" in all cases is defined as the total number of hours for which a grade has been issued.

In the case of program termination, no further registration in a graduate classification will be permitted. Under extenuating circumstances the student will be reinstated upon the written recommendation of the department and approval by the Graduate Dean. Departments have the prerogative of recommending the termination of a student's graduate admission at any time if the student is not making satisfactory progress toward the degree.

Students who are eligible to attend the first summer session are eligible to attend either or both summer sessions. For example, students who receive a notice of "Graduate Admission Terminated" at the end of the first summer session may register for second summer session unless the major department recommends otherwise.

Eligibility for Assistantship, Fellowship or Traineeship

A graduate student must be in good academic standing to be eligible for appointment to an assistantship, fellowship or traineeship and must be registered in each semester in which the appointment is in effect.

Audits

Graduate students wishing to audit a course must have the approval of their advisor and of the department offering the course. While auditors receive no course credit, they are expected to attend class regularly. The degree to which an auditor must participate in class beyond regular attendance is optional with the instructor. Any auditing requirements should be clearly explained in writing to the student at the beginning of the semester. Should an instructor conclude that an auditor has failed to fulfill the stipulated requirements, the instructor is justified in marking NR (no recognition given for an audit) on the final grade report.

Audits (AU) in subjects in which the graduate student has had no previous experience will be evaluated at full credit value in determining course loads. Audits taken as repetition of work previously accomplished are considered at one-half their credit value in calculating course loads. With the single exception of foreign language audits, all audit registration must fall within the maximum permissible course loads. While audit registrations are evaluated for purposes of determining permissible course loads in terms of the regulations of the Graduate School, the University Cashier's Office considers all audits, except one permitted free of charge, in terms of full credit value in calculating tuition.

Graduation

There are three official graduations for graduate students per year, occurring at the end of the fall and spring semesters and at the end of the second summer session. Formal commencement exercises are held at the end of spring and fall semesters, but any student who graduated the preceding second summer session is eligible to participate in the December commencement. All students scheduled to graduate in the fall or spring semesters are strongly encouraged to attend the respective commencement. Any doctoral candidate wishing to have the degree conferred in absentia must notify the Graduate School in writing; Master's candidates should contact their departments or programs.

Diplomas

Doctoral students graduating in the spring and fall are awarded their diplomas during the commencement exercises. Master's students, both master's and doctoral students graduating at the end of second summer session, or those students receiving permission to receive the degree in absentia can pick up their diploma during the designated pick-up dates and times in Registration and Records. Any diplomas not picked up are mailed by the Department of Registration and Records, which is also responsible for the ordering of diplomas.

Students earning a Master of Arts, Master of Science, Doctor of Education or Doctor of Philosophy degree will receive diplomas designating the degree but not the major or program of study. Students earning a master's degree in a designated field will receive diplomas indicating the field of specialization, i.e., Master of Forestry.

Students with co-majors will have those identified on their transcripts, but not on their diplomas.

Apply to Graduate

Each student must make sure to Apply to Graduate in MyPack Portal for the term in which they plan to graduate in. It is advised that students apply to graduate when the defense is scheduled, but it can be done at any time in the semester up until 5:00 p.m. on the Apply to Graduate Deadline, which is the same as the Registration Required Thesis Review Deadline. The date is on the Graduate School Calendar. A student must apply to graduate in order to graduate, have transcript posted, and receive a diploma.

Interinstitutional Registration Program

NC State participates in an Interinstitutional Registration program with the University of North Carolina at Chapel Hill, the University of North Carolina at Greensboro, the University of North Carolina at Charlotte, North Carolina Central University, and Duke University. The program provides the opportunity for students to enroll at another institution for a course or courses not offered on their home campus. Other activities include a cooperative library arrangement, joint student activities, and faculty cooperation and interchange.

Even though taking a course on another campus, the student is exclusively under the administrative direction of the NC State Graduate School. Enrollment for courses on other campuses will take place on this campus, using an Interinstitutional Approval form from Registration and Records. Such courses are considered by the Graduate School to be a part of the student's normal load and the student will be billed for the courses through the NC State University Cashier's Office. During the summer, the procedure is somewhat different in that a student must be enrolled in a least one course on the NC State campus during the same session as the requested interinstitutional registration.

When the grading system of the other institutions varies from that of NC State, grades received under Interinstitutional Registration will be converted to the NC State system. "H," "P," "L, and "F" grades earned at the University of North Carolina at Chapel Hill and "E," "G," "S" and "F" grades earned at Duke University will be converted to "A," "B," "C" and "F" grades, respectively.

Cooperating Raleigh Colleges

The Cooperating Raleigh Colleges (CRC) is a voluntary organization composed of NC State, Meredith College, William Peace University, St. Augustine's University, and Shaw University. Graduate programs are currently offered only at NC State and Meredith College, but graduate students can enroll at either institution for a course or courses not offered by their home campus.

Any NC State graduate degree student who is enrolled in at least three graduate credit hours on the NC State campus may take a course at Meredith College during fall or spring semester, provided that

- 1. the course is not taught on the NC State campus, and
- 2. the advisory committee considers the course educationally desirable.

NC State students may not register for more than a total of two courses in any semester at Meredith, and not more than six of the required academic credits for a master's degree at NC State may be accepted from that institution. Grades from Meredith are not used in computing a student's NC State grade point average.

Under this agreement, regular tuition and fees are paid to NC State. Special fees may be required for specific courses at Meredith, and the student is responsible for paying these fees.

Academic Common Market

Important Notice: As a result of the General Assembly's Appropriations Act of 2011, North Carolina's participation in the ACM, as both a sender and a receiver of students, will be phased out beginning with academic year 2012-2013. Students certified for the ACM who are enrolled and begin study prior to the second summer session in 2012 may continue to pay in-state tuition as long as they remain enrolled in their specified degree program. (Revised March 8, 2012)

The Academic Common Market (ACM) is a cooperative agreement among universities in 16 states in the southeastern United States. The ACM allows a student to enroll in a graduate program at a university in another state without having to pay out-of-state tuition if that program of study is neither

- 1. offered by the public institutions in the student's home state, nor
- 2. commonly available in the other southeastern states.

Tuition and Fees

The <u>University Cashier's Office (https://treasurer.ofb.ncsu.edu/cashier/)</u> provides billing, financial aid disbursement and account management services to all students. All students paying tuition and fees are entitled to University services, facilities and programs, including the services, facilities, and programs offered by the Student Center, Health Services, Physical Education Department, and Athletics Department.

Residence for Tuition Purposes (https://grad.ncsu.edu/admissions/residency/)

Residency for Tuition Purposes

Residency Determination has been centralized for the state of North Carolina. Applicants and currently enrolled students who are claiming NC Residency or wish to apply for in-state residency for tuition purposes, are required to go through the <u>North Carolina Residency Determination Service (RDS) (https://ncresidency.cfnc.org/residencyInfo/home)</u>. NOTE: A determination of out-of-state will be given to anyone who has not yet lived in North Carolina for 365 days.

If you are applying to a Graduate Program and claim to be an NC resident, follow the instructions on the application and complete your residency determination at ncresidency.org (http://ncresidency.org). Once you have received a validated residency decision from RDS, enter the Residency Determination Number (RCN) into your application. If you are ready to submit your application prior to completing your RDS determination or receiving your RCN number, you will have the opportunity to enter it later through your applicant portal. Entering your RCN after submission will not effect your application, but until it is provided, you will be considered an out-of-state applicant.

Updating your RDS determination with NC State: If your RDS decision or expiration date has changed since you originally provided NC State with your Residency Determination Number (RCN) number, you will need to complete the residency form in your <u>applicant portal (https://applygrad.ncsu.edu/apply/status)</u>, or update it through NC State's self-service residency page: <u>go.ncsu.edu/residencystatus (http://go.ncsu.edu/residencystatus)</u>. Click on the Personal Information tile followed by Residency Information, then enter your RCN in the corresponding box and select "Save RCN" and then "Request Residency Data" NOTE: You must have a unity ID to login to access this page.

Current graduate students applying for residency next year: Begin completing your residentiary acts (outlined below in the Basic Requirements of Residency) about a year before you will be applying for residency. You will need to wait until you have lived in North Carolina for 365 days before applying through the RDS system or you will automatically receive a determination of out-of-state. If you do apply too early, you can log back into your RDS account and Request a Reconsideration once you have met the 365 day requirement.

Any questions and concerns can be directed to: rdsinfo@ncresidency.org (mailto:rdsinfo@ncresidency.org), 919-835-2290, or 844-319-3640.

The tuition classification laws described here apply to all constituent institutions of the University of North Carolina – Public System and are taken from NC G.S. 116-143

(http://www.ncleg.net/EnactedLegislation/Statutes/HTML/ByArticle/Chapter 116/Article 14.html) and the North Carolina State Residence Manual (http://www.northcarolina.edu/sites/default/files/documents/residence manual aug 2010.pdf).

RDS Troubleshooting

REASONS WHY YOU MAY BE SEEING OUT-OF-STATE ON YOUR BILL OR ADMISSION LETTER, EVEN AFTER RECEIVING A DECISION OF IN-STATE FROM RDS:

Residency classifications from RDS are only valid for 15 months. Therefore, if you have applied to a graduate program and completed your RDS determination over 15 months prior to the start of your admit term, your tuition classification at the time of admission will show as Out-of-state. This is the case even if you initially received a decision of In-state from RDS. You will need to go back to RDS to request a "reconsideration" that should extend the expiration date of your In-state determination. Ideally, you would do this about a year, or less than 15 months before the start of date of your first semester of enrollment. You will then need to update your record by following the steps described above in the "Updating your RDS with NC State" section.

Expiration dates of documents are factor in RDS determinations. If you are an international student holding a visa or green card with an expiration date prior to the start date of your intended or next semester of enrollment, your residency determination will have an expiration date matching your visa or green card document.

RDS is strict with all dates, including students who fall under the Active Duty Military Exception (outlined below). The report date on the active duty member's military orders or affidavit determines the day the student's eligibility for in-state tuition begins. Until it is exactly that date, the student's residency determination will show as out-of-state.

Basic Requirements of Legal Residency

1. Have 12 months of physical presence in North Carolina.

Have held legal residency for at least 12 months prior to the start of the requested term.

Demonstrate that you are a legal resident of North Carolina and not just temporarily residing in the state as a student.

Have not had any significantly long breaks in physical presence in North Carolina for the past 12 months.

2. Have the financial and legal ability to establish a domicile.

Be (mostly) financially independent from non-North Carolina parents or guardians.

Not be a tax dependent of non-North Carolina parents or guardians.

Be able to show that you can financially support yourself independent of any out of state sources.

Have an independent financial aid status, if using financial aid.

3. Demonstrate the intent to make North Carolina your home aside from attending school.

Complete a cluster of residency acts a year prior to the start of the requested term.

Not hold ties to another state that would indicate you are a resident of that state.

Explain why some residency acts may not have been able to be completed, if that is the case.

Special Exceptions

- 1. Active-Duty Military Stationed in North Carolina, their spouses and their dependents (legal residency is not required to use this benefit).
- 2. Full-Time UNC System Employees, their spouses and their dependents (you must be a legal resident of any duration to use this benefit).

Marriage Benefit

If you currently residing in North Carolina and married to a legal North Carolina resident, you are permitted to use your spouse's time in the state and residentiary acts as your own. Your own abode must be in North Carolina.

International Students

International students may or may not have the capacity to establish a domicile. For those who have capacity, the requirements are the same as those for U.S. Citizens. Examples of eligible immigration classifications are:

Permanent Resident, A-1, A-2, E-1, E-2, E-3, G-1, G-2, G-3, G-4, H-1B, H-1C, H-4, I, K-1, K-2, K-3, K-4, L-1A, L-1B, L-2, N, O-1, O-3, P-1, P-2, P-3, P-4, R-1, R-2, T-1, T-2, T-3, T-4, T-5, TPS, U-1, U-2, U-3, U-4, U-5, V-1, V-2, and V-3

Those who do not have capacity cannot qualify as residents for tuition purposes, regardless of any other factors. Ineligible immigration classifications include: B, C, D, F, J, M Q, S, and TN visas and DACA

Financial Aid

Graduate students may receive financial support through fellowships, traineeships and teaching or research assistantships sponsored by federal, state and private agencies. A graduate student must be in good academic standing (3.000 GPA or better) to be eligible for appointment to an assistantship, fellowship, or traineeship and must be registered in each semester in which the appointment is in effect. There are also minimum registration requirements for eligibility for tuition and health insurance benefits.

Assistantships (https://grad.ncsu.edu/faculty-and-staff/student-funding/assistantships/). Fellowships (https://grad.ncsu.edu/faculty-and-staff/student-funding/fellowships/). Graduate Student Support Plan (https://grad.ncsu.edu/students/gssp/).

The Office of Scholarships and Financial Aid (https://emas.ncsu.edu/units/scholarships-and-financial-aid/) (OSFA) assists students and parents in applying for and securing financial assistance when family resources are insufficient to meet educational expenses. The OSFA offers assistance with any part of the financial aid process (including scholarships, grants, loans and campus employment), as well as providing financial aid counseling assistance.



NORTH CAROLINA STATE UNIVERSITY

THE **GRADUATE** SCHOOL

Graduate Degrees | Minors | Graduate Certificates | Courses or Other Support to Graduate Programs

Fields Offering Graduate Degrees

The Graduate School offers major programs of study in the following fields. Except where noted by an exception in parentheses, these programs required the Graduate Records Examination (GRE) scores and will not take action on applications unless accompanied by scores for at least the GRE General (Aptitude) Test (verbal, quantitative and analytical):

Accounting - MR (GMAT)

Adult and Community College Education - EdD, MS, MEd (GRE, MAT)

Aerospace Engineering - PhD, MS (GRE)

Agricultural and Extension Education - EdD, MS, MR (GRE)

Agricultural and Resource Economics - MS (None)

Analytics - MS (None)

Animal Science - MS, MR (GRE)

Animal Science & Poultry Science - PhD (GRE)

Anthropology - MA (GRE)

Applied Mathematics - PhD, MS (GRE)

Architecture - MR (GRE)

Art and Design - MR (GRE (GRE only required for students with undergraduate cumulative GPA of less than 3.0 or as directed by Graduate Program Directors.))

Biochemistry - PhD, MS, MR (GRE)

Bioinformatics - PhD, MR (GRE)

Biological and Agricultural Engineering - PhD, MS, MR (GRE)

Biology - PhD, MS, MR

Biomanufacturing - MS, MR (GRE)

Biomathematics - PhD, MS, MR (GRE)

Biomedical Engineering - PhD (GRE)

Business Administration - MR (GRE, GMAT)

Chemical Engineering - PhD, MS, MR (GRE)

Chemistry - PhD (GRE)

Civil Engineering - PhD, MS, MR (GRE)

Climate Change and Society - MR (None (GRE: please provide scores if available. In lieu of GRE scores the program may request an interview or portfolio of professional work.))

Clinical Mental Health Counseling - MS, MEd (GRE, MAT)

College Counseling and Student Development - MS, MEd (GRE, MAT)

Communication - MS (GRE)

Communication Rhetoric and Digital Media - PhD (GRE)

Comparative Biomedical Sciences - PhD, MS (GRE (GRE scores required for all students except those with a

DVM degree from the United States))

Computer Engineering - PhD, MS (GRE)

Computer Networking - MS (GRE)

Computer Science - PhD, MS, MR (GRE)

Creative Writing - MFA (GRE)

Crop Science - PhD, MS, MR (GRE)

Curriculum and Instruction - MS, Med (GRE, MAT)

Design - PhD, DDES (GRE)

Economics - PhD, MR, MS (GRE (GRE is only required for doctoral applicants.))

Educational Administration and Supervision - EdD (GRE, MAT)

Educational Leadership, Policy and Human Development - PhD (GRE)

Electric Power Systems Engineering - MS (GRE)

Electrical Engineering - PhD, MS (GRE)

Elementary Education - MS, MEd (None)

Engineering - MR

English - MA (GRE)

Entomology - PhD, MS (GRE)

Environmental Assessment - MR

Environmental Engineering - MS, MR (GRE)

Fiber and Polymer Science - PhD (GRE)

Financial Mathematics - MR (GRE)

Fisheries, Wildlife, and Conservation Biology - PhD, MS, MR (GRE)

Food Science - PhD, MS, MR (GRE)

Foreign Languages and Literatures - MA

Forest Biomaterials - PhD, MS, MR (GRE)

Forestry and Environmental Resources - PhD, MS, MR (GRE)

Functional Genomics - PhD, MS, MR (GRE)

Genetics - PhD, MS, MR (GRE)

Geospatial Analytics - PhD

Geospatial Information Science and Technology - MR

Graphic Design - MR (GRE (International students must submit English proficiency scores: TOEFL (minimum 100) or IELTS (minimum 7).))

Higher Education Administration - MS, Med (GRE)

History - MA (GRE)

Horticultural Science - PhD, MS, MR

Industrial Design - MR (GRE)

Industrial Engineering - PhD, MS, MR (GRE)

Integrated Manufacturing Systems Engineering - MR (GRE)

International Studies - MR (GRE)

Landscape Architecture - MR (GRE)

Learning and Teaching in STEM - PhD (GRE)

Learning Design and Technology - MS, MEd

Liberal Studies - MA (None)

Management - MR

Marine, Earth, and Atmospheric Sciences - PhD, MS (GRE)

Materials Science and Engineering - PhD, MS, MR (GRE)

Mathematics - PhD, MS (GRE)

Mathematics Education - MS, Med

Mechanical Engineering - PhD, MS (GRE)

Microbial Biotechnology - MR (GRE) Microbiology - PhD, MS, MR (GRE)

Nanoengineering - MR (GRE recommended if available but not required)

Natural Resources - MS, MR (GRE)

Nuclear Engineering - PhD, MS, MR (GRE)

Nutrition - PhD, MS, MR (GRE)

Operations Research - PhD, MS, MR (GRE)

Parks, Recreation, and Tourism Management - PhD, MS, MR

Physics - PhD, MS (GRE)

Physiology - MS, MR (GRE)

Plant Biology - PhD, MS, MR (GRE)

Plant Pathology - PhD, MS, MR (None)

Poultry Science - MS, MR (None)

Psychology - PhD, MS (GRE)

Public Administration - PhD, MR (GRE)

Public History - PhD, MA (GRE)

School Administration - MR (GRE, MAT)

School Counseling - MS, MEd (GRE, MAT)

Science Education - MS, Med

Social Work - MR

Sociology - PhD, MR (GRE)

Soil Science - PhD, MS, MR (GRE)

Special Education - MS, MEd (GRE, MAT)

Statistics - PhD, MR (GRE)

STEM Education - MS, Med

Teacher Education and Learning Sciences - PhD (GRE)

Teaching - MA (None)

Technical Communication - MS (GRE)

Technology Education - MS, Med

Textile Chemistry - MS (GRE)

Textile Engineering - MS (GRE)

Textile Technology Management - PhD (GRE, GMAT, MAT)

Textiles - MS, MR (GRE)

Toxicology - PhD, MS, MR (GRE)

Training and Development - MEd (None)

Youth, Family, and Community Sciences - MS, MR (None)

Departments not normally requiring GRE scores may in special instances require their submission as additional information to be used in making a judgment of the student's potential for success in a graduate program.

Fields Offering Minors

The following fields and units, while not offering graduate degrees, support graduate education by offering graduate minors:

Biotechnology

Cognitive Science

Computational Engineering and Science

Ecology

Environmental Remote Sensing and Image Analysis

Food Safety

Genetic Engineering and Society

Geographic Information Systems

Interdisciplinary

Plant Physiology

Water Resources

Women's & Gender Studies

Departments not normally requiring GRE scores may in special instances require their submission as additional information to be used in making a judgment of the student's potential for success in a graduate program.

Fields Offering Graduate Certificates

The following fields and units, while not offering graduate degrees, support graduate education by offering graduate certificates:

Administration and Leadership - Family and Youth Programs

Agricultural and Extension Education

Applied Statistics and Data Management

Biology for Educators

City Design

Climate Adaptation

Consumer Textile Product Design and Development

Counselor Education

Data Science Foundations

Digital Humanities

Downstream Biomanufacturing

Energy and Technology in Architecture

Environmental Assessment

Family Life Education and Coaching

Feed Science

Finance

Geographic Information Systems

Horticultural Science

Leadership and Volunteer Management

Marketing

Materials Science and Engineering

Mathematics

Mathematics Teaching and Learning

Medical Devices

Military Land Sustainability

Molecular Biotechnology

Nano-Systems Engineering

Nanobiotechnology

Nonprofit Management

Nonwovens Science and Technology

Nuclear Nonproliferation Science and Policy

Operations and Supply Chain Management

Policy Analysis

Professional Communication and Managerial Skills

Program Development in Family Life Educ Grad Certificate

Public Interest Design

Renewable Electric Energy Systems

Special Education: Multi-Tiered Systems of Support

Sport and Entertainment Venue Management

Statistics Education

Tax Analytics and Technology

Teaching Training and Educational Technology

Technology Entrepreneurship and Commercialization

Textile Brand Management and Marketing

Textile Supply Chain Management

Upstream Biomanufacturing

Watershed Assessment and Restoration

Youth Development and Leadership

Departments not normally requiring GRE scores may in special instances require their submission as additional information to be used in making a judgment of the student's potential for success in a graduate program.

Fields Offering Courses or Other Support to Graduate Programs

The following fields and units, while not offering graduate degrees, support graduate education by offering graduate courses or in some other capacity:

Biological Sciences Education Multidisciplinary Studies Philosophy and Religious Studies

Accounting

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Accounting						Y		

GRADUATE FACULTY

K. Krawczyk, Department Head

Directors of Graduate Programs:

D. S. Showalter, Box 8113, scott showalter@ncsu.edu, Accounting

S. G. Allen, Box 8114, 919/515-5584, steve allen@ncsu.edu, Business Management

Named Professors: M. S. Beasley, F. A. Buckless; Professors: M. Bradford, B. C. Branson, J. F. Brazel, Y. A. Chen, K. Krawczyk, D. P. Pagach, R. B. Sawyers, P. F. Williams; Emeritus Professors: R. L. Peace; Associate Professors: R. Pennington, A. P. Schmidt, E. Z. Taylor, G. J. Zuckerman; Emeritus Associate Professors: R. L. Wright; Teaching Professors: D. S. Showalter

The Master of Accounting (MAC) is a professional degree designed to prepare students for careers in public accounting, in the accounting and finance divisions of major corporations, and in education, government, and non-profit institutions. Job titles of recent graduates include Staff Accountant, Internal Auditor, Financial Analyst, Budget Analyst, Cost Accountant, Tax Specialist, Assistant Controller, SBI Agent, State Auditor, and Internal Revenue Agent. Graduates will also be prepared to complete the CPA Examination.

Admission Requirements: Admission to the MAC program is competitive. The best-qualified applicants will be accepted up to the number of spaces available for new students. The Admissions Committee evaluates candidates on three criteria:

- undergraduate academic record and grade point average;
- GMAT score*;
- "Leadership" -- relevant activities and/or work experience; and presence, leadership, integrity, and other personal characteristics.

[*The Admissions Committee requires all applicants who score below 530 on their first attempt to retake the GMAT exam prior to the application deadline.]

Individuals with a Bachelor's degree in any major may apply to the program; however, any applicant without a Bachelor's degree in Accounting must complete a series of undergraduate Accounting prerequisites before qualifying as a MAC degree candidate. More complete information can be found on the MAC website.

Master's Degree Requirements: Students complete an 11-course sequence in one year that includes eight graduate-level Accounting courses and three non-Accounting MBA courses (31 total credit hours). The curriculum is designed to provide a broad-based professional education. Students can choose to obtain a concentration in Information Technology (IT), Enterprise Risk Management (ERM), or Tax Strategy.

Other Relevant Information: Masters students must begin the degree program in the summer or in the fall semester. The program is primarily designed for full-time students, and most classes meet during the day. A limited part-time option, where students complete the program in two years, is also available.

All application materials are due by one of three application deadlines - December 1 for early admission and

consideration in both the MAC Fellowship and Scholarship programs; **February 1** for final consideration in both the MAC Fellowship and Scholarship programs; **March 1** for all other applicants.

Click on **Graduate Courses** for current course information.

NCSU Graduate Catalog

Agricultural and Human Sciences

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Agricultural and Extension Education		Y		Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

J. A. Bruce, Box 7607, jabruce2@ncsu.edu, Agricultural and Human Sciences

Named Distinguished Professors: D. J. Werner; Professors: C. E. Farin, J. L. Flowers, B. M. Kirby, R. W. Shearon, E. B. Wilson; Adjunct Professors: M. M. Baker; Emeritus Professors: B. Croom, D. M. Jenkins, T. T. McKinney, G. E. Moore, R. D. Mustian; Associate Professors: J. A. Bruce, K. S. Jayaratne, M. J. Kistler, T. D. Park, W. J. Warner; Adjunct Associate Professors: D. A. Boone, R. J. Harrell; Emeritus Associate Professors: R. M. Stewart; Assistant Professors: K. E. McKee, J. Morgan; Adjunct Assistant Professors: M. Addor; Teaching Associate Professors: C. V. Jordan

The Agricultural and Human Sciences Department provides advanced study for professionals in agricultural education, extension education, and related careers. Programs of study are designed to meet the individual needs of the student. Courses may be selected that lead to advanced teacher licensure in agriculture or an emphasis in extension education leading to advancement in careers with the Cooperative Extension Service. Additional specialization is provided through a minor and/or advised elective courses. The following graduate programs in Agricultural and Extension Education are available in the Department:

Graduate Certificate in Agricultural and Extension Education (requires 15 hours)

Master of Science in Agricultural and Extension Education (requires 36 hours including a thesis)

Master of Agricultural and Extension Education (requires 36 hours)

Master of Agricultural and Extension Education (a 100% Internet-based degree program requires 36 hours)

Sixth-Year Certificate in Agricultural Education

Doctor of Education in Agricultural and Extension Education (requires 72 hours)

Admission Requirements: In addition to the Graduate School admission requirements, the Agricultural and Extension Education graduate program requires for full admission:

- A minimum undergraduate GPA of 3.0 for Masters students; a minimum graduate GPA of 3.5 for Doctoral students
- A minimum GRE combined General Test score of 300 and 4.0 or better on the GRE Analytical Writing Test (GRE scores can be waived for Masters applications with the completion of a 3.0 or higher in six credit hours of graduate-level courses)
- Three references
- A statement of purpose: Prospective graduate students will draft a statement of purpose for graduate work. If the student intends to complete a thesis or dissertation, the statement should also indicate the nature of potential research work, including possible topics or questions, and minimally two professors from the Agricultural and Human Science department whose research areas potentially align with those possible research topics. Prospective students should plan to meet with faculty priorr to submitting their applications to discuss the research with those professors and include those ideas in the statement.
- An interview (personal or by telephone) may also be required.

Master's Degree Requirements: The Department offers an M.S. degree, which requires a thesis for which the student receives six hours of credit, and a Master of Agricultural and Extension Education as a non-thesis track. All Master's degree programs require a total of 36 credit hours. The student's advisory committee will meet with the student to determine the appropriate courses for their Plan of Work. Minors are optional but, if selected, require a minimum of

nine credit hours.

Graduate Certificate Requirements: The Department also offers a graduate certificate in agricultural and extension education. This certificate program involves completion of 15 credit hours and preparation of a professional portfolio. Based on the student's focus, they will choose from AEE 500, 501, 503, 522, 524, 529, 535, 641, and 735 for the Agricultural Education focus, and AEE 501, 521, 523, 533, 560, 577, 705, and 641 for the Extension Education focus.

Sixth-Year Certificate: The Department offers an array of courses that are recognized by the NC Department of Public Instruction as comprising a Sixth-Year Certificate. Students are required to complete 24 hours of advanced graduate work past the Master's degree. Contact the Director of Graduate Programs for details.

Doctoral Degree Requirements: A Doctor of Education (Ed.D.) degree in Agricultural and Extension Education is offered. A minimum of 72 hours past the Bachelor's degree is required. More hours may be required based upon the past degrees and experiences of the candidate. The student's graduate committee will determine the specific courses needed. At least six hours of statistics is required. Twelve hours of credit is earned for writing the dissertation (AEE 895). The student's advisory committee will meet with the student to determine the appropriate courses for their Plan of Work.

Student Financial Support: A limited number of research and/or teaching assistantships are available on a competitive basis. Applications for open positions are due in January for the following academic year. Other financial aid is available from the Office of Financial Aid and on a competitive basis from the Graduate School.

Click on **Graduate Courses** for current course information.

NCSU Graduate Catalog

Analytics

Degrees Offered:

P	Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
A	nalytics				Y				

GRADUATE FACULTY

Director of Graduate Programs:

M. Rappa, Box 7293, 919/513-0480, michael rappa@ncsu.edu, Analytics

Named Professors: D. A. Dickey; Named Distinguished University Professors: M. Rappa; Professors: C. G. Healey, S. J. Simmons, R. S. Warr, L. A. Williams; Adjunct Professors: S. M. Hsiang; Emeritus Named Professors: C. P. Jones; Emeritus Professors: H. A. Devine, C. Meyer; Associate Professors: R. Y. Chirkova, J. B. Earp, B. A. Watson; Associate Professors of the Practice: S. Dasmohapatra; Adjunct Associate Professors: T. Xie

The Master of Science in Analytics (MSA) is an intensive 10-month degree with a strong practical orientation designed to give students a thorough understanding of the tools, methods, and applications of advanced analytics. The curriculum is designed entirely for MSA students and classes are taught as a cohort. Students work frequently in teams and receive hands-on training using real data with industry-standard software tools. Its educational objectives include but are not limited to topics such as data quality and integration, data and text mining, time series forecasting, optimization, survival analysis, and other areas of statistics; data visualization; data security, privacy, and ethics; project management and communication skills. Student team projects aim to provide experience with solving complex analytical problems in industry and in other areas of science and engineering.

Admission Requirements: Admission to the MSA program is highly competitive. The best-qualified applicants will be accepted up to the limited number of seats available for students each year. The Admissions Committee evaluates candidates on criteria such as:

- overall academic record and grade point average;
- academic performance in analytical/quantitative subjects;
- relevant employment experience and potential to succeed in the profession; and
- leadership, integrity, and other personal character traits.

Individuals with a bachelor's degree in any major may apply to the program; however, an applicant without prior coursework in statistics, mathematics, computer programming, would need to complete a set of prerequisite courses before qualifying as a candidate for admission. More information can be found on the <u>MSA website</u>.

Master's Degree Requirements: Students complete 30 credit hours of defined coursework in a period of ten months beginning in Summer Session II and ending the following Spring semester. The integrated curriculum is designed to provide a focused education in the software tools, methods and applications of data analytics.

Other Relevant Information: Students must begin the degree program in the first semester (Summer Session II) and complete all 30 credit hours of the curriculum. The program is designed for full-time students only. Applications for admission are reviewed between November and April. International applicants must apply early.

Click on **Graduate Courses** for current course information.

Animal Science & Poultry Science

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Animal Science & Poultry Science	Y							

GRADUATE FACULTY

Directors of Graduate Programs:

- J. Eisemann, Box 7621, 919/515-4044, joan eisemann@ncsu.edu, Animal Science
- J. L. Grimes, Box 7608, 919/515-5406, jesse grimes@ncsu.edu, Poultry Science

Named Professors: W. L. Flowers; Named Distinguished Professors: J. T. Brake, P. R. Ferket, J. Odle, C. J. Schal; Professors: G. W. Almond, K. E. Anderson, C. M. Ashwell, D. K. Carver, P. A. Curtis, F. W. Edens, J. Eisemann, K. L. Esbenshade, C. E. Farin, V. Fellner, J. L. Grimes, S. W. Kim, D. K. Larick, H. Liu, M. S. Merrill, J. A. Moore, P. E. Mozdziak, E. O. Oviedo-Rondon, J. N. Petitte, R. M. Petters, J. A. Piedrahita, M. H. Poore, M. T. See, P. D. Siciliano, E. VanHeugten, D. P. Wages; *Adjunct Professors*: R. D. Boyd, J. B. Golden, W. O. Herring, E. A. Koutsos, S. M. Shane, Z. Uni; *Emeritus Named Professors*: E. Eisen; *Emeritus Professors*: B. P. Alston-Mills, G. A. Benson, L. S. Bull, T. A. Carter, V. L. Christensen, R. G. Crickenberger, J. D. Garlich, W. M. Hagler, R. W. Harvey, G. B. Havenstein, W. L. Johnson, J. R. Jones, C. A. Lassiter, J. Luginbuhl, R. L. McCraw, W. M. Morrow, R. M. Myers, C. R. Parkhurst, O. W. Robison, F. D. Sargent, B. W. Sheldon, J. C. Shih, T. D. Siopes, S. P. Washburn, L. W. Whitlow, J. C. Wilk, C. M. Williams; Associate Professors: R. B. Beckstead, D. J. Hanson, M. T. Knauer, M. D. Koci, C. Maltecca, S. E. Phillips, D. H. Poole, K. E. Saker, G. Valacchi; Adjunct Associate Professors: R. J. Harrell, C. R. Stark; Emeritus Associate Professors: E. U. Dillard, M. D. Whitacre; Assistant Professors: D. A. Esposito, A. C. Fahrenholz, K. A. Livingston, C. C. Nestor, S. H. Ward; Research Assistant Professors: F. Tiezzi Mazzoni Della Stella Ma; Adjunct Assistant Professors: K. A. Gray, C. L. Heggen-Peay, T. F. Middleton, D. W. Newcom, C. J. Williams; Extension Assistant Professors: D. D. Harmon; Teaching Associate Professors: S. Trivedi; Teaching Assistant Professors: K. D. Ange-Van Heugten

Doctoral Degree Requirements: A doctoral degree in Animal Science and Poultry Science with a concentration in either Animal Science or Poultry Science is offered. Specific course requirements are flexible and each student's program is developed in consultation with their Ph.D. advisory committee. The minor is optional but external faculty representation is required on the advisory committee.

Note: The Master's programs in Animal Science or Poultry Science are administered independently by each department.

Admission Requirements: Factors considered for admission include: grade point average, scores on the GRE, undergraduate courses, experiences, statement of interest, and letters of recommendation. A member of either the Department of Animal Science or Department of Poultry Science faculty serves as the applicant's advisor.

Student Financial Support: The Departments of Animal Science and Poultry Science offer a limited number of research and teaching assistantships that are awarded on a competitive basis. Students are also supported by research grant funds awarded to faculty members. The total support package includes health insurance, tuition, and a stipend. Students applying for these assistantships should apply by January 31 for fall admission.

Other Relevant Information: There are two curriculum codes for the Animal Science and Poultry Science doctoral degree program. If a student is interested in a program concentration in Animal Science, the appropriate curriculum code for the admissions application is ANA. If the student is interested in a program concentration in Poultry Science, the appropriate curriculum code for the admissions application is ANP. If the appropriate curriculum code is not selected, it will delay the department's receipt of the applicant's information from the Graduate School.

Click on **Graduate Courses - Animal Science** for current course information.

Click on <u>Graduate Courses - Poultry Science</u> for current course information.

Animal Science

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Animal Science				Y		Y		

GRADUATE FACULTY

M. T. See, Department Head

Director of Graduate Programs:

J. Eisemann, Box 7621, 919/515-4044, joan_eisemann@ncsu.edu, Animal Science

Named Professors: W. L. Flowers; Named Distinguished Professors: J. Odle; Professors: G. W. Almond, J. Eisemann, K. L. Esbenshade, C. E. Farin, V. Fellner, F. Isik, S. W. Kim, D. K. Larick, H. Liu, M. S. Merrill, J. A. Moore, R. M. Petters, J. A. Piedrahita, M. H. Poore, M. T. See, P. D. Siciliano, E. VanHeugten, E. B. Wilson; USDA Professors: J. B. Holland; Adjunct Professors: R. D. Boyd, M. Choct, J. A. Hansen, E. A. Koutsos, W. B. Roush, T. A. van Kempen; Emeritus Named Professors: E. Eisen; Emeritus Professors: B. P. Alston-Mills, G. A. Benson, L. S. Bull, E. V. Caruolo, R. G. Crickenberger, W. J. Croom, W. M. Hagler, R. W. Harvey, W. L. Johnson, J. R. Jones, C. A. Lassiter, J. Luginbuhl, R. L. McCraw, W. M. Morrow, R. M. Myers, C. R. Parkhurst, O. W. Robison, F. D. Sargent, S. P. Washburn, L. W. Whitlow, J. C. Wilk, C. M. Williams; Associate Professors: D. J. Hanson, M. T. Knauer, C. Maltecca, S. E. Phillips, D. H. Poole, K. E. Saker, G. Valacchi; Research Associate Professors: L. Xi; Adjunct Associate Professors: D. A. Esposito, C. C. Nestor, C. L. Pickworth, S. H. Ward; Research Assistant Professors: F. Tiezzi Mazzoni Della Stella Ma; Adjunct Assistant Professors: D. S. Casey, J. V. Felts, A. G. Gernat, K. A. Gray, C. L. Heggen-Peay, J. W. Holl, R. O. Maguire, T. F. Middleton, D. W. Newcom; Extension Assistant Professors: D. D. Harmon; Teaching Associate Professors: S. Trivedi; Teaching Assistant Professors: K. D. Ange-Van Heugten

Animal science offers an opportunity for training in a diversity of basic sciences and the integration of such knowledge into the framework of a living system. Students can major in animal science or co-major in animal science and one of the following disciplines: biochemistry, genomics, genetics, microbiology, nutrition, physiology or statistics. Students can also concentrate in management and production areas.

Admission Requirements: Factors considered for admission include: grade point average, scores on the GRE, undergraduate courses, experiences, statement of interest, and letters of recommendation. In addition, a member of the Animal Science Graduate Faculty must be willing to serve as the applicant's advisor for the M.S. program.

Master of Science: A minimum of 30 credit hours, including 18 hours of graduate level course work in the degree program, is required. The minor is optional and external faculty representation is not required on the advisory committee.

Master of Animal Science: The non-thesis Master of Animal Science (MR) degree (Option B) requires a minimum of 36 credit hours, 19 credits of core courses and 17 credits of elective courses. Additional information regarding core courses and elective course requirements is on the <u>Animal Science Graduate Program</u> web site. The MR degree program is also offered through distance education.

Doctoral Degree Requirements: The department offers a Ph.D. program in <u>Animal Science and Poultry Science</u> with a concentration in Animal Science. A minimum of 72 graduate credit hours are required. For a student who already holds a Master's degree, upon initial admission a maximum of 18 credit hours from the Master's degree may be applied to this minimum.

Student Financial Support: A limited number of research and teaching assistantships are available through the department and are awarded on a competitive basis. Students are also supported by research grant funds awarded to faculty members. The total support package includes health insurance, tuition, and a stipend. Students applying for assistantships should apply by January 31 for fall admission.

Other Relevant Information: To provide an opportunity for students to develop their teaching skills, graduate students are required to assist in the departmental teaching program regardless of source of financial support. All graduate students in the Department of Animal Science who are mentored by departmental graduate faculty members are required to teach a minimum of one semester during their M.S. and Ph.D. programs.

Click on **Graduate Courses** for current course information.

Anthropology

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Anthropology					Y			

GRADUATE FACULTY

Director of Graduate Programs:

J. K. Millhauser, Box 8107, 919/513-0284, jkmillha@ncsu.edu, Sociology and Anthropology

Professors: A. H. Ross; Associate Professors: D. T. Case, K. L. Ebert, N. M. Haenn, A. Manzoni, J. M. Wallace; Adjunct Associate Professors: W. E. Wormsley; Assistant Professors: M. A. DeSoucey, C. A. Juarez, S. C. McManus, J. K. Millhauser; Adjunct Assistant Professors: B. L. Clark; Teaching Assistant Professors: C. A. Lewald

The graduate degree in Anthropology is a 30-hour, two-year long Master of Arts program which will enable students to gain a deeper understanding of the behavior, beliefs, and evolutionary legacy of the human species. Students normally select a specialty area in which to focus their studies, such as archaeology, biological anthropology, or cultural anthropology.

The program provides excellent preparation for students wishing to pursue a Ph.D. in Anthropology. Graduates of the program may also pursue employment in a variety of areas including research and educational institutions, development organizations and non-profits, human resource management, cultural resource management, museums, or in physical anthropology or archeology labs.

Admissions Requirements: In addition to general Graduate School requirements, applicants are required to provide a completed application, including transcripts, GRE scores, three letters of recommendation, a personal statement, and a writing sample. CV or resume is optional but encouraged. The deadline for completed applications is January 10. The curriculum is set for fall admission only.

Master's Degree Requirements: The M.A. degree requires a total of 30 credit hours. All students take three hours of theory and select a specialty area, such as archaeology, bioarchaeology, or cultural anthropology. Students who write a master's thesis will take six hours of thesis research credit (ANT 695). Students completing a non-thesis (Option B) program take additional coursework in place of the six hours of ANT 695 credit.

Student Financial Support: A limited number of teaching and research assistantships are available on a competitive basis.

Click on **Graduate Courses** for current course information.

Architecture

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Architecture						Y		

GRADUATE FACULTY

D. B. Hill, Department Head

Director of Graduate Programs:

D. B. Hill, Box 7701, 919/515-8357, dbhill@ncsu.edu, Architecture

D. K. Gulling, Box 7701, 919/515-8362, dkgullin@ncsu.edu, Architecture

Professors: R. F. Abrams, T. M. Barrie, D. B. Hill, W. Place, J. P. Rand; Professors of the Practice: M. E. Purnell; Emeritus Professors: P. Batchelor, G. Bizios, M. J. Malecha, F. A. Rifki, H. Sanoff; Associate Professors: B. Bell, S. Cho, J. Coll-Barreu, D. K. Gulling, J. Hu, B. W. Laffitte, P. E. Morgado, S. G. Queen, K. J. Schaffer, J. O. Tector; Adjunct Associate Professors: M. Kentgens-Craig; Assistant Professors: T. L. Allen, B. Erdim; Research Assistant Professors: T. R. Rider; Assistant Professors of the Practice: G. D. Hallowell

The School of Architecture offers three tracks to the Master of Architecture degree: Track 1 is for applicants with a four-year undergraduate pre-professional degree in architecture from a National Architecture Accrediting Board (NAAB) accredited program and may be completed in two years of full-time study. Track 2 is for applicants holding a five-year NAAB-accredited Bachelor of Architecture degree and may be completed in three semesters of full-time study. Track 3 is for students with undergraduate degrees in fields other than architecture. Track 3 normally requires three semesters of preparatory work before entering the final two-year program of graduate study. Some applicants with design-related academic or professional experience may be able to complete the preparatory work in less time.

A variety of courses are available within the School of Architecture in urban and community design, architectural history and theory, material fabrication, professional practice, building technology and environmental systems.

Admission Requirements: In addition to documents required by the Graduate School, students apply to the Master of Architecture program by submitting the following documents by January 5: (1) Portfolio of work; (2) Completed School Personal Data Form; (3) GRE scores (Track 3 applicants only); (4) TOEFL/ IELTS scores (foreign language students only). Applicants will be considered on an individual basis. Exceptions to Graduate School policy may be made for students indicating other qualifications and professional experience.

Master's Degree Requirements: The school stipulates the minimum course credits based on educational and professional goals to individualize a plan of study.

Student Financial Support: The school awards scholarships, awards, and teaching assistantships competitively. It also supports national and statewide scholarships, fellowships, and awards. All support is merit based, not need based. No special application for such support is necessary at the time of admissions.

National Architectural Accrediting Board (NAAB): In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 8-year, 4-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The NC State University School of Architecture offers the following NAAB accredited degree programs:

B.Arch (pre-professional degree + 30 graduate credits) M.Arch Track 1 (pre-professional degree + 48 graduate credits) M.Arch Track 3 (non-pre-professional degree + 96 credits)

Next Accreditation Visit for All Programs: 2026

Click on **Graduate Courses** for current course information.

Art and Design

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Art and Design						Y		

GRADUATE FACULTY

Directors of Graduate Programs:

E. Polyak, Box 7701, epolyak@ncsu.edu, Art and Design

T. L. Allen, Box 7701, 617/388-1078, tlallen2@ncsu.edu, Art and Design

Professors: S. D. Brandeis, C. D. Cox, H. P. Marchant Montenegro, J. M. Scearce; Emeritus Professors: C. E. Joyner; Associate Professors: L. M. Diaz, P. J. Fitzgerald, R. A. Flinchum, S. G. Queen, K. C. Rieder, M. E. Russo; Associate Professors of the Practice: P. D. Lovell; Emeritus Associate Professors: V. K. Plume, D. G. Raymond, S. M. Toplikar; Assistant Professors: T. L. Allen, T. M. Berreth, K. A. Diuguid, J. D. LeBlanc, C. Mouat Croxatto, E. Polyak; Teaching Assistant Professors: T. L. Temple

The Art and Design program offers an educational structure that creates a new art and design professional: one for whom artistic and practical talents are developed as different expressions of individual potential. Our objectives are to graduate highly educated art and design professionals with integrated competencies in art, design, aesthetics, theory, hand and digital technologies, design process, and the combination of skills in the chosen concentration with other disciplines of human knowledge.

Areas of concentration in the Master of Art and Design are (1) Fibers and Surface Design, and (2) Animation and New Media.

Admission Requirements: Students will be required to submit a portfolio of past work in electronic format; three letters of recommendation; a statement of personal goals; and transcripts of undergraduate work (minimum undergraduate GPA of 3.0). An interview will be required, but in cases of international applicants or those quite distant from NC State University, may be conducted by means of a long distance phone conversation or may be waived at the faculty's discretion.

Masters Degree Requirements: The program of study requires a minimum of 48 credit hours of graduate work depending on background preparation of the applicant. Separate tracks of 60 and 72 credit hours accommodate students changing design disciplines or with insufficient background in the chosen concentration.

Other Information: We will only admit students to the program in the fall semester each year. Deadline for application is January 5.

Click on **Graduate Courses** for current course information.

Biochemistry

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Biochemistry	Y			Y		Y		

GRADUATE FACULTY

M. A. Simpson, *Department Head*

Directors of Graduate Programs:

J. J. Barycki, Box 7621, jjbaryck@ncsu.edu, Biochemistry M. B. Goshe, Box 7622, michael goshe@ncsu.edu, Biochemistry

Named Distinguished Professors: L. K. Hanley-Bowdoin; Professors: J. J. Barycki, D. T. Brown, J. W. Brown, H. M. Hassan, C. L. Hemenway, J. M. Horowitz, J. A. Knopp, J. M. Mackenzie, E. S. Maxwell, E. S. Miller, M. A. Simpson, K. R. Weninger, P. L. Wollenzien; Research Professors: J. Cavanagh; Adjunct Professors: R. E. Cannon, J. Cavanagh, J. D. Otvos; Emeritus Professors: J. S. Kahn, W. L. Miller, J. W. Moyer, E. C. Theil; Emeritus Named Distinguished Professors: H. R. Horton; Emeritus Distinguished Professors: R. R. Sederoff, H. E. Swaisgood; Associate Professors: M. B. Goshe, C. C. Hardin, F. Meilleur, R. B. Rose; Research Associate Professors: H. Gracz, R. Hernandez; Adjunct Associate Professors: D. F. Ferreira; Assistant Professors: C. J. Doherty, G. Xu; Research Assistant Professors: P. D. Swartz; Adjunct Assistant Professors: R. E. Cannon; Teaching Assistant Professors: J. T. Ascencio-Ibanez, D. G. Presutti

The graduate program in biochemistry is designed to prepare individuals for careers in research and teaching. Emphasis is primarily focused on laboratory research, where graduate students work closely with faculty. The department is well equipped to conduct research in biochemistry, biophysics, molecular biology and molecular genetics.

Admission Requirements: Students entering the graduate program in biochemistry should have a bachelor's degree in biochemistry, chemistry or a related physical or biological science, including undergraduate courses in organic chemistry, calculus, physics and physical chemistry, as well as biochemistry/molecular biology.

Master of Science Degree Requirements: The Master of Science degree requires a minimum of 30 credit hours of courses and thesis research including nine credit hours in biochemistry graduate core courses. On average, completion of the M.S. degree requires two to three years.

Doctoral Degree Requirements: Requirements for the Ph.D. degree include a minimum of 30 credit hours in course work and thesis research, including the three graduate core courses and at least two advanced courses in biochemistry/molecular biology; teaching experience. Formal course work may be completed within three semesters; on average, completion of the Ph.D. degree requires five years.

Student Financial Support: The department endeavors to meet the financial needs of students accepted into its doctoral program. Essentially all admitted students are offered the opportunity to apply for graduate teaching and research assistantships.

Other Relevant Information: The Department of Biochemistry is jointly administered by the Colleges of Agriculture and Life Sciences and Physical and Mathematical Sciences. The department, committed to a strong research environment, interacts with other life science departments on campus as well with the other research universities and institutes of the Research Triangle area.

Click on **Graduate Courses** for current course information.

Biological and Agricultural Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Biological and Agricultural Engineering	Y			Y		Y		

GRADUATE FACULTY

G. A. Fox, **Department Head**

Director of Graduate Programs:

J. J. Classen, Box 7625, 919/515-6755, john classen@ncsu.edu, Biological and Agricultural Engineering

Named Professors: M. D. Boyette, W. F. Hunt; Professors: J. J. Cheng, M. S. Chinn, G. A. Fox, G. L. Grabow, S. A. Hale, L. W. Li, K. P. Sandeep, S. B. Shah, W. Yuan; Adjunct Professors: C. R. Daubert, B. E. Farkas; Emeritus Professors: R. O. Evans, G. D. Jennings, L. F. Stikeleather, D. H. Willits; Emeritus Named Distinguished Professors: R. W. Skaggs; Associate Professors: F. P. Birgand, M. R. Burchell, J. J. Classen, S. G. Hall, R. L. Huffman, P. Kolar, G. T. Roberson, M. A. Youssef; Emeritus Research Associate Professors: G. M. Chescheir; Adjunct Associate Professors: D. M. Amatya, P. N. Dugba, R. R. Sharma-Shivappa; Assistant Professors: C. F. Castro Bolinaga, N. Nelson, C. Sayde, J. K. Ward; Research Assistant Professors: C. Simmons; Adjunct Assistant Professors: E. Z. Bean, K. B. Cantrell, J. M. Hathaway, P. R. Puckett; Extension Associate Professors: B. A. Doll; Extension Assistant Professors: G. H. Ellington; Emeritus Extension Professors: J. Spooner

Course offerings or research facilities are available in the following areas: bioinstrumentation, biomechanics, bioprocessing, food and process engineering, biological systems modeling, aquaculture, hydrology, water table management, ground water management, animal waste management, non-point source pollution, power and machinery, soil and water, controlled environment agriculture, electrical and electronic systems, robotics and machine vision.

Admission Requirements: A baccalaureate in biological or agricultural engineering or the equivalent is the preferred prerequisite for admission. Those with strong academic background in the physical or biological sciences may also be admissible with a requirement for certain additional background undergraduate work. In the case of applicants with Master's degrees, a Master's GPA of at least 3.2 is required for admission. Exceptions to the overall undergraduate GPA requirements may be made for cases where performance in the major or during the last two years was at or above the 3.00 level.

GRE scores are recommended for those with academic performance records near the minimal level. Applicants without engineering degrees from domestic accredited institutions must submit GRE scores to be considered for admission. Admission decisions are made by a faculty review committee. The best-qualified applicants will be accepted up to the number of spaces available for new students.

Master's Degree Requirements

M.BAE: This Option B non-thesis degree requires 30 hours of approved graduate course work. This degree is available via Distance Education.

M.S.: This is a thesis degree requiring 30 hours of approved graduate coursework.

Doctoral Degree Requirements: Course hour requirements are flexible but typically include at least 36 hours beyond a Master's degree. Direct admission without a Master's is possible in exceptional cases. A minor is required.

Student Financial Support: Graduate assistantships are available to students in this program on a competitive basis.

Click on **Graduate Courses** for current course information.

Biology

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Biology	Y			Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

R. E. Irwin, Box 7617, reirwin@ncsu.edu, Zoology

Named Professors: W. G. Cope, R. R. Dunn, H. B. Patisaul; Named Distinguished Professors: R. R. Anholt; Named Distinguished University Professors: T. F. MacKay; Professors: D. D. Aday, B. L. Black, R. J. Borski, D. Buchwalter, J. A. Buckel, H. V. Daniels, D. B. Eggleston, J. R. Godwin, K. Gross, J. M. Hinshaw, R. E. Irwin, C. A. Layman, T. M. Losordo, J. A. Rice, A. H. Ross, M. H. Schweitzer, D. Shea; Research Professors: S. M. Belcher; USDI Professors: J. A. Collazo, T. J. Kwak, T. R. Simons; Adjunct Professors: A. E. Bogan, J. G. Boreman, J. J. Govoni, N. M. Haddad, J. E. Hightower, G. McMahon, J. Rogers, F. S. Scharf; Emeritus Professors: P. T. Bromley, B. J. Copeland, F. T. Corbin, P. D. Doerr, W. C. Grant, R. M. Grossfeld, T. L. Grove, H. F. Heatwole, R. A. Lancia, R. L. Noble, K. H. Pollock, J. F. Roberts, H. A. Underwood, J. G. Vandenbergh, T. G. Wolcott; Associate Professors: A. Hartstone-Rose, R. B. Langerhans, C. J. Mattingly, N. M. Nascone-Yoder, M. Niedzlek-Feaver; Adjunct Associate Professors: A. B. Heckert, R. M. Shelley, B. L. Stuart; Assistant Professors: K. Marsden, L. A. McGraw, J. E. Meitzen, J. K. Pacifici, A. J. Planchart, B. J. Reading, R. B. Roberts, B. W. Taylor; Research Assistant Professors: J. R. Fischer, M. B. Reiskind, A. A. Smith, L. E. Zanno; Adjunct Assistant Professors: T. R. Black, A. E. Bogan, D. T. Cobb, L. B. Daniel, M. J. Eaton, R. J. Heise, C. J. Kendall, R. W. Laney, A. J. McKerrow, J. A. Morris, K. W. Shertzer, A. J. Terando; Teaching Associate Professors: M. D. Engell, M. G. Ferzli, J. L. Lubischer, L. D. Parks; Lecturers: L. B. Daniel

Areas of study include: cell biology, physiology, ecology, evolution, behavior, and fisheries, wildlife and conservation biology. Specializations within these areas include developmental biology, neurobiology, genomics, invertebrate biology, animal reproduction, biorhythms, behavioral ecology, community ecology, population ecology, conservation biology, fisheries ecology, wildlife field studies, aquaculture and others.

Application Deadlines: To guarantee consideration for funding, applications should be complete by the following dates: for Fall Semester admission both U.S. and international applicants should have their application materials completed by January 15; for Spring Semester the deadline is October 15 for U.S. applicants and international applicants. Please note that it typically requires four to six weeks from the date of your request until transcripts and letters of recommendation reach us. Applications received after the dates listed above will still be considered until the Graduate School deadlines (June 25 and November 25 for U.S. applicants, March 1 and July 15 for international applicants); however, opportunities for funding may be limited (note that the Biology Graduate Program does not accept M.S. and Ph.D. students without support).

Admission Requirements: It is important that you identify a potential faculty adviser, as this will greatly increase your chance of admission to NCSU's Biology Graduate Program. Although all applications are made available to faculty advisers for review, a graduate student will not be admitted to the Biology Program for graduate studies unless the prospective student has identified a faculty adviser. Once a faculty adviser has requested review of a prospective student, the application is then evaluated with regard to the applicant's potential for success in graduate school. The admissions process involves consideration of the ability of our program to accommodate students.

Successful applicants usually have a Bachelor's degree in Biological Sciences or a related field with at least an overall B average and a minimum number of courses in biology (and related fields) and supporting fields (6 in biology, 4 in chemistry, 2 in physics, and 2 in mathematics). In addition to the applicant's grades and coursework, we consider relevant experience (e.g., through internships, research experiences, volunteer or paid work, and publications), statement

of interest, and letters of recommendation. GRE scores are not required. We expect applicants for the MS degree to have at least a 3.0 GPA, and applicants for the PhD degree to have at least a 3.2 GPA. Research experience is highly recommended.

Master's Degree Requirements: M.S.: AEC502 and PHI816 (or equivalent) are required. No more than six hours of temporary courses (AEC/BIO/INB 624, 824) or two hours of departmental seminar can be included in the 30-hour requirement for the M.S. Six hours of research credits (INB 695) resulting in a thesis are required. A minor (usually 9-10 hours) is optional. Other requirements may be imposed by the advisor.

Doctoral Degree Requirements: AEC502 and PHI816 (or equivalent) are required. A student's advisory committee recommends appropriate courses which will provide a strong foundation in the student's area of interest. A minimum of 10 hours of research (INB 895) leading to a dissertation is required. A minor (usually 9-10 hours) is optional. Other requirements may be imposed by the advisor.

Concentrations: Students in all Biology Degree Programs must select a Concentration. Concentrations include Aquaculture and Aquatic Sciences, Molecular, Cellular and Developmental Biology, Ecology and Evolution, Integrative Biology, Physiology and Behavior, and Zoology. Consult the Biology Graduate Program Handbook for Concentration-specific requirements.

Student Financial Support: Graduate teaching and research assistantships are available to well-qualified M.S. and Ph.D. students.

Other Relevant Information: Students may also pursue degrees in interdepartmental programs in Biomathematics, Physiology, and Fisheries and Wildlife Sciences. Excellent research facilities, equipment and computers are available. Off-campus research is conducted at the Pamlico Aquaculture Field Laboratory, research and extension centers in Eastern and Western North Carolina, the Center for Marine Science and Technology in Morehead City, and at facilities of state and federal agencies and private organizations. Field work can be conducted at nearby natural areas and laboratory work at various state and federal laboratories associated with the department. For additional information see the Biology Graduate Program web pages: https://cals.ncsu.edu/applied-ecology/students/graduate/biology/ and https://bio.sciences.ncsu.edu/graduate/graduate-programs/Biology.

Click on **Graduate Courses** for current course information.

Biomanufacturing

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Biomanufacturing				Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

B. M. Rao, Box 7905, bmrao@ncsu.edu, Chemical and Biomolecular Engineering

Named Professors: A. M. Grunden; Named Distinguished Professors: R. G. Carbonell; Professors: M. C. Flickinger, H. H. Lamb, P. E. Mozdziak, H. A. Sederoff, J. D. Sheppard; Research Professors: I. Y. Perera; Associate Professors: P. T. Hamilton, G. J. Williams; Research Associate Professors: K. Efimenko; Assistant Professors: S. Menegatti; Teaching Associate Professors: G. L. Gilleskie; Teaching Assistant Professors: J. H. van Zanten

The Golden LEAF Biomanufacturing Training and Education Center (BTEC) has established two new graduate degrees -- a Master of Biomanufacturing (MR) and a Master of Science (MS) in Biomanufacturing. These degrees may be taken full-time or part-time. The MS in Biomanufacturing requires completion of advanced hands-on courses in the BTEC simulated cGMP facility, global regulatory affairs training and is a research-based degree which requires a written thesis in addition to selected bioscience-focused MBA coursework. The Master of Biomanufacturing (non-thesis) combines advanced biomanufacturing cGMP BTEC courses, global regulatory affairs training with additional bioscience-focused MBA courses taught by faculty from the Jenkins Graduate School of Management, and is designed to prepare program graduates to work as managers and for leadership positions in the biomanufacturing industries. Both the MR and MS degrees include professional skills training in effective oral, electronic and written communication for both technical and business careers. Most coursework and required laboratory courses are offered in the evenings at BTEC to accommodate working professionals.

Admission Requirements: Admission to the BIOM program requires completion of an undergraduate degree in engineering, life science or physical sciences, letters of recommendation, and a statement of career goals. A minimum overall grade point average of 3.0 and GRE scores in the 80th percentile are also required. Applicants with previous industry experience or working professionals are strongly encouraged to apply.

Master's Degree Requirements

Master of Biomanufacturing. BIOM students will complete a minimum of 36 total credit hours including 3 credit hours of biomanufacturing industry internship, 6 credits of industry practicum case studies, 2 credit hours of process-focused research experience under the direction of a graduate advisor, 3 credits of global regulatory affairs and 9 credits of MBA courses in project management, biosciences management and business foundations. Students will submit final written reports that summarize their internship as well as their research experience and will make a presentation to the BIOM graduate faculty.

Master of Science. The Master of Science degree also requires a minimum of 36 credit hours. Similar to the MR, the BIOM Master of Science curriculum will combine interdisciplinary coursework with 6 MBA credits including a course in project management. In addition, the BIOM Master of Science program will provide more experience in bioprocess development research to familiarize students with the methods, ideals and goals of independent investigation, the concepts of quality by design (QbD), and methods used in industry for design of experiments (DoE) to define design space for industrial processes. As a consequence of the stronger focus on research, BIOM Master of Science students will complete 4 credit hours of industry-focused process research mentored by their BIOM graduate advisor. Each student will submit a written thesis, which will be presented to the student's BIOM graduate advisory committee.

Student Financial Support: A limited number of full-time participants in the Master of Biomanufacturing program

may be eligible for industry-sponsored graduate scholarships.

Other Relevant Information: BIOM accepts students in Spring and Fall Semesters. A 10 credit hour graduate minor is also available for NCSU students currently enrolled in other graduate programs. Two unique 12 credit Graduate Certificates: Upstream Biomanufacturing and Downstream Biomanufacturing are also offered for MR students currently enrolled in other graduate programs. Individuals interested in the BIOM program looking for more information should contact: Chris Smith, BIOM Academic Program Coordinator. (919) 513-2195, chris_smith4@ncsu.edu.

Click on **Graduate Courses** for current course information.

Biomathematics

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
<u>Biomathematics</u>	Y			Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

A. L. Lloyd, Box 8213, 919/515-1910, allloyd@ncsu.edu, Mathematics

Named Distinguished Professors: Z. Zeng; Named Distinguished University Professors: H. T. Banks, C. K. Hall; Professors: K. Gross, M. Haider, J. M. Haugh, G. R. Hess, A. L. Lloyd, S. R. Lubkin, G. G. McRae, S. V. Muse, M. Olufsen, S. M. Sullivant, J. L. Thorne, H. T. Tran; Adjunct Professors: J. T. Betts, M. A. Coffin, R. B. Conolly, N. M. Haddad, C. L. Hughes, P. H. Morgan, J. T. Ottesen, R. W. Setzer, E. A. Stone; Emeritus Professors: J. W. Bishir, M. L. Hauck, K. H. Pollock, H. E. Schaffer, J. F. Selgrade, R. E. Stinner; Emeritus Named Distinguished Professors: W. R. Atchley, J. E. Riviere; Associate Professors: R. B. Langerhans, B. J. Reich, C. E. Smith; Adjunct Associate Professors: W. O. McMillan; Assistant Professors: B. S. Akpa, K. B. Flores, R. Ke, R. Sozzani; Adjunct Assistant Professors: S. Bhattacharya, G. Bobashev, J. S. Kimbell, A. Mokhtari, Q. Zhang

Biomathematics is an interdisciplinary graduate program offering courses and research opportunities in basic and applied mathematical biology. Degree programs are flexible to accommodate students with backgrounds in the biological, mathematical or physical sciences. The program also offers Ph.D. and master's-level minors. Additional information on requirements, courses, faculty and current research can be found at the website www.ncsu.edu/biomath.

Admission Requirements: Applicants should have either a Bachelor's degree in biology with evidence of aptitude and interest in mathematics, or a bachelor's in a mathematical science with evidence of aptitude and interest in biology. Advanced (multivariate) calculus, linear algebra and general biology are prerequisites for all BMA courses, and deficiencies in these should be remedied during the first year of graduate study. The application must include a narrative statement (1-2 pages) of the applicant's goals and reasons for interest in the BMA program.

Master's Degree Requirements: The M.S. and M.BMA. degrees require BMA 771-772 and one other BMA course; two upper-level biology courses; and three courses from the mathematical sciences or statistical sciences. The M.S. degree requires a thesis, and the M.BMA. requires two additional courses and a written project.

Doctoral Degree Requirements: Course requirements consist of a "core" and a "concentration" in some area of biology or mathematical sciences. Core requirements are: BMA 771-772, 773 and 774; three upper-level biology courses from at least two areas (e.g., physiology and evolution); and additional courses from the mathematical or statistical sciences. Concentration consists of either a Ph.D. co-major in a biological or mathematical science or a coherent series of five graduate courses approved by the student's committee, which must include a two-semester sequence and at least one 700-level course.

Financial Assistance: TAs (generally in the Departments of Mathematics or Statistics). RAs and internships are available. Awards are based on GRE scores, transcripts, letters of recommendation, and the personal statement. RAs usually are held by continuing students. To receive **full** consideration for financial aid, the completed application must be received by January 15.

Other Relevant Information: All students are required to participate in the BMA Graduate Seminar. Course requirements can be met by examination or by demonstrating that an equivalent course was completed at another university.

Click on **Graduate Courses** for current course information.

Biomedical Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Biomedical Engineering	Y			Y				

GRADUATE FACULTY

N. L. Allbritton, Department Head

Director of Graduate Programs:

C. M. Gallippi, Box 7115, cmgallip@email.unc.edu, Biomedical Engineering

Named Professors: A. E. Tonelli; Named Distinguished Professors: F. S. Ligler; Distinguished Professors: O. A. Harrysson, H. T. Nagle, M. A. Vouk; Distinguished University Professors: D. L. Bitzer; Professors: N. L. Allbritton, G. D. Buckner, M. Chow, P. A. Dayton, M. G. Forest, R. P. Gardner, R. E. Gorga, E. Grant, M. Haider, S. A. Hale, H. Huang, A. Ivanisevic, C. Kleinstreuer, H. Krim, A. V. Kuznetsov, W. Lin, S. R. Lubkin, M. G. McCord, J. F. Muth, R. J. Narayan, M. Olufsen, H. C. Pillsbury, A. Rabiei, J. M. Ramsey, S. C. Roe, M. K. Stoskopf; Research Professors: J. Cavanagh; Adjunct Professors: J. Cavanagh, W. C. Holton, G. Lazzi, E. G. Loboa-Polefka, B. J. Oberhardt; Emeritus Professors: C. F. Abrams, R. M. Grossfeld, N. A. Monteiro-Riviere, S. A. Rajala, W. E. Snyder, L. F. Stikeleather, D. E. Thrall; Associate Professors: K. Cheng, R. G. Dennis, M. Gamcsik, Z. Gu, H. Huang, D. G. Kamper, D. S. Lalush, J. M. Macdonald, C. S. Nam, K. Saul, C. E. Smith, M. A. Tommerdahl, G. M. Walker, D. A. Zaharoff; Research Associate Professors: O. V. Favorov, R. L. Goldberg, G. S. McCarty; Associate Professors of the Practice: A. J. DiMeo; Adjunct Associate Professors: G. S. Sawicki; Assistant Professors: A. C. Brown, Y. Brudno, J. Cole-Husseini, M. Daniele, M. B. Fisher, J. R. Franz, D. O. Freytes, C. M. Gallippi, S. M. Gomez, X. Hu, G. F. Pinton, M. Sano; Adjunct Assistant Professors: M. Mohiti Asli; Teaching Associate Professors: L. A. Cartee, H. Orun

The Joint Biomedical Engineering Graduate Program is administered by the combined biomedical engineering graduate faculty from both North Carolina State University and University of North Carolina at Chapel Hill. The joint program also has close working relations with the Research Triangle Institute and industry within the Research Triangle area. These associations enable students to obtain research training in a wide variety of fields and facilitate the selection and performance of dissertation research. The department, thus, provides students with excellent opportunities to realize the goal of enhancing medical care through the application of modern technology.

Biomedical engineering is a dynamic field stressing the application of engineering techniques and mathematical analysis to biomedical problems. Faculty research programs are key to the program, and they include five primary research directions: rehabilitation engineering, regenerative medicine, biomedical imaging, microsystems engineering, and pharmacoengineering. The department offers graduate education in biomedical engineering leading to the master of science and doctor of philosophy degrees.

Students enter this program with backgrounds in engineering, physical science, mathematics or biological science. Curricula are tailored to fit the needs and develop the potential of individual students. In addition, courses in statistics, mathematics, life sciences and engineering sciences provide a well-rounded background of knowledge and skills.

Admission Requirements: Students must satisfy all entrance requirements for The Graduate School of the University of North Carolina at Chapel Hill or the Graduate School at North Carolina State University, and must demonstrate interest and capability commensurate with the quality of the biomedical engineering program. Prospective students may apply to the graduate school at either UNC–Chapel Hill or NC State. All applicants are considered together as a group. Generally, applications should be submitted by December 11 for consideration for admission in the coming fall semester. Applicants are expected to present Graduate Record Examination (GRE) scores; verbal scores should be at or above the 50th percentile and quantitative scores should be at or above the 70th percentile to be competitive. Admitted

students are expected to have an average grade of B (cumulative GPA 3.30) or better and are encouraged to have undergraduate research experience. The program requires that a one-to-three page personal statement about research interest and background be submitted.

Students should have a good working knowledge of mathematics at least through differential equations, plus two years of physical or engineering science and basic courses in biological science. Deficiencies in preparation can be made up in the first year of graduate training

Doctoral Degree Requirements: A minimum of 52 semester hours of graduate work is required (beyond the Bachelor's degree). Degree candidates in this program are expected to obtain experience working in a research laboratory during their residence and to demonstrate proficiency in research. The Ph.D. dissertation should be judged by the graduate committee to be of publishable quality. The student must meet the Graduate School's residency requirement at UNC-CH or NC State as appropriate. Further information on the BME Ph.D. program can be found on the department website.

Required and highly recommended courses: Students are required to take a BME Seminar each semester which is offered at both UNC-CH and NC State. Students must also complete six credits of graduate engineering topics, six credits of graduate life science topics, three credits of engineering mathematics, and three credits of statistics. Students may choose from a number of courses to meet these requirements. Such choices are made in consultation with the student's academic advisor and the Director of Graduate Programs/Studies.

Comprehensive and Qualifying Examinations: Doctoral students qualify for the Ph.D. degree by meeting grade requirements in their core courses, and then advance on to written and oral preliminary exams before admission to candidacy. Details can be found on the <u>department website</u>.

Click on **Graduate Courses** for more current course information.

For UNC courses, see **UNC Graduate Record**.

Business Management

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Business Administration						Y		

GRADUATE FACULTY

- B. L. Kirkman, *Department Head*, Business Management
- H. S. Heese, *Department Head*, Business Management

Director of Graduate Programs:

S. G. Allen, Box 8114, 919/515-5584, steve allen@ncsu.edu, Business Management

Named Distinguished Professors: J. Carr, H. S. Heese; Named Distinguished University Professors: R. B. Handfield; Distinguished Professors: S. W. King; Professors: S. G. Allen, P. Arasu, S. H. Barr, J. W. Bartley, J. D. Bohlmann, C. C. Bozarth, M. Bradford, J. F. Brazel, Y. A. Chen, R. L. Clark, D. H. Henard, B. L. Kirkman, S. K. Markham, R. C. Mayer, A. Padilla, D. P. Pagach, F. C. Payton, B. B. Tyler, M. D. Walker, R. S. Warr, I. R. Weiss; Professors of the Practice: L. Shamblin; Adjunct Professors: R. E. Kouri; Emeritus Named Professors: C. P. Jones; Emeritus Professors: D. L. Baumer, G. W. Dickson, D. M. Holthausen; Associate Professors: B. R. Danielsen, J. B. Earp, J. A. Ellis, E. Kemahlioglu-Ziya, S. Krishnamurthy, K. Mitchell, P. W. Mulvey, J. M. Pollack, M. A. Stanko, J. S. Stonebraker, D. P. Warsing, G. S. Young, G. J. Zuckerman; Adjunct Associate Professors: C. M. Newmark; Emeritus Associate Professors: N. M. Bhawe, H. J. Dretsch, S. M. Robinson, J. D. Smith, Q. Wu; Adjunct Assistant Professors: M. D. Kowolenko; Lecturers: T. E. Balan, G. M. Devine

The Master of Business Administration (MBA) program develops business leaders for tomorrow's global markets and technologies. The Jenkins MBA program provides students with the requisite foundation in general business management, while also allowing time to focus on an area of particular interest. In pairing academic excellence with real-world experience, Jenkins MBA students are ready to meet global challenges head-on with practical, technology-driven solutions.

Students may choose to pursue an MBA through one of four platforms: the Full-time program on NC State's main campus; the Professional Evening program with locations on NC State's main campus as well as a RTP location; or the Online program.

Admission Requirements: In addition to the basic Graduate School admission requirements, full-time MBA applicants must submit recent GMAT/GRE scores, unless approved for a test waiver. Admission decisions for both full-time and working professional applicants are based on academic performance and potential, GMAT or GRE scores (when applicable), essays, recommendations, relevant work experience and an interview. Students must have previous coursework in statistics before entering the program. For further information, please visit the MBA website at www.mba.ncsu.edu.

Master of Business Administration: The MBA program requires every student to complete the core curriculum that includes coursework in accounting, economics, finance, marketing, operations / supply chain, organizational behavior, statistics and strategy, as well as communications and critical thinking and writing. Full-time students must complete a minimum of 56 credit hours; Professional Evening and Online students must complete a minimum of 40 credit hours.

Additional Requirements

Full-time: In addition to the core curriculum, students must complete a minimum of 12 elective hours within a concentration; an advanced analytics course; and a practicum. Students then have the opportunity to choose from a variety of elective courses to meet the 56 credit hour minimum.

Professional Evening and Online: In addition to the core curriculum, students must complete a minimum of 6 elective hours within an area of emphasis; an advanced analytics course; and a practicum. Students then choose from a variety of elective courses to meet the 40 credit hour minimum.

Minor in Management: Students enrolled in Master's and doctoral programs can complete the minor by taking courses that meet requirements within the MBA degree. Master's students must take 9 hours; doctoral students must take 15 hours.

Click on **Graduate Courses** for current course information.

Chemical and Biomolecular Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Chemical Engineering	Y			Y		Y		

GRADUATE FACULTY

P. S. Fedkiw, *Department Head*

Director of Graduate Programs:

S. A. Khan, Box 7905, 919/515-4519, khan@ncsu.edu, Chemical and Biomolecular Engineering

Named Professors: M. D. Dickey, H. Jameel, R. M. Kelly, S. A. Khan, G. N. Parsons, O. D. Velev; Named Distinguished Professors: R. G. Carbonell, J. M. DeSimone, B. Pourdeyhimi; Named Distinguished University Professors: K. E. Gubbins, C. K. Hall; Distinguished Professors: J. Genzer, R. J. Spontak; Distinguished University Professors: D. F. Ollis; Professors: C. M. Balik, P. S. Fedkiw, M. C. Flickinger, R. E. Gorga, C. S. Grant, J. M. Haugh, H. H. Lamb, P. K. Lim, P. R. Westmoreland; Adjunct Professors: C. R. Daubert, M. Schoen, M. Sliwinska-Bartowiak; Emeritus Named Professors: R. M. Felder, H. B. Hopfenberg; Associate Professors: C. Beisel, J. S. Jur, F. Li, S. W. Peretti, B. M. Rao; Research Associate Professors: K. Efimenko; Adjunct Associate Professors: J. Srogl; Assistant Professors: M. Abolhasani, N. C. Crook, L. C. Hsiao, A. J. Keung, S. Menegatti, G. T. Reeves, A. San Miguel Delgadillo, E. E. Santiso, Q. Wei; Adjunct Assistant Professors: P. V. Gurgel; Extension Associate Professors: H. Winston; Teaching Associate Professors: G. L. Gilleskie; Teaching Assistant Professors: J. H. van Zanten

Research activities in the department include: computational nanoscience and biology; biomolecular engineering and biotechnology; catalysis, combustion, kinetics and electrochemical engineering; biofuels and renewable energy technology; green chemistry and engineering; innovative textiles, polymers and colloids; nanoscience and nanoengineering; and thermodynamics and molecular simulation.

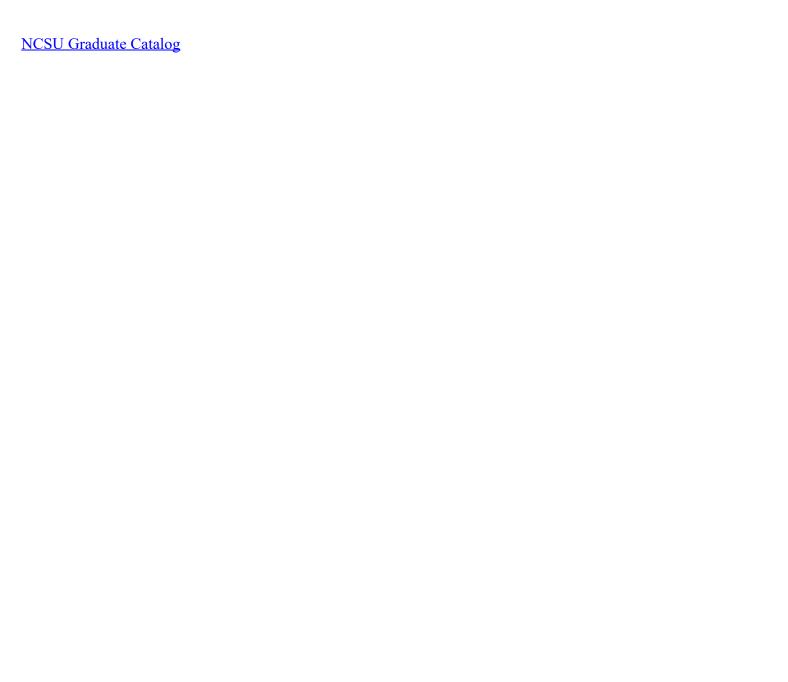
Admissions Requirements: Students admitted to the graduate program normally have a Bachelor's degree in chemical engineering or its equivalent. Students with undergraduate degrees in chemistry, physics or other engineering disciplines may be admitted but will be required to make up undergraduate course work deficiencies in chemical engineering without graduate credit. The most promising candidates will be accepted up to the number of spaces available.

Master of Science Degree Requirements: The M.S. degree requires a minimum of 30 credit hours. A set of four core courses is required. Two options are provided. In the thesis option, the thesis must be defended in a final public oral examination. In the non-thesis option, the student must satisfactorily complete a total of 10 graduate courses. A unique feature of the non-thesis option is the availability of a Distance Education Masters in which the students can complete all 30 credit hours remotely through online courses offered via streaming videos without being on campus.

Master of Chemical Engineering Degree Requirements: The M.Ch.E. degree requires a minimum of 30 credit hours. A set of four core courses is required. A three-credit project is also required.

Doctor of Philosophy Degree Requirements: Students normally take a set of five core courses, two advanced courses and at least 6 credits of dissertation research. A thesis is required; this must be defended in a final public oral examination. In addition, the candidate must: (1) submit and defend an original written proposition in any area of chemical engineering, and (2) submit and defend a proposal to perform his/her thesis research.

Click on Graduate Courses for current course information.



Chemistry

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Chemistry	Y							

GRADUATE FACULTY

E. F. Bowden, *Department Head*

Director of Graduate Programs:

D. A. Shultz, Box 8204, 919/515-6972, shultz@ncsu.edu, Chemistry

Named Distinguished Professors: D. W. Brenner; Named Distinguished University Professors: J. S. Lindsey, B. M. Novak; Professors: E. F. Bowden, C. L. Bumgardner, F. N. Castellano, S. Franzen, C. B. Gorman, J. D. Martin, C. C. Melander, D. C. Muddiman, M. T. Oliver-Hoyo, D. A. Shultz, A. I. Smirnov, M. H. Whangbo; Adjunct Professors: A. Deiters, M. Khaledi; Emeritus Professors: A. J. Banks, R. D. Bereman, H. H. Carmichael, D. L. Comins, L. D. Freedman, F. W. Getzen, K. W. Hanck, F. C. Hentz, M. Khaledi, R. H. Loeppert, C. G. Moreland, S. T. Purrington, A. F. Schreiner, W. P. Tucker, J. L. Whitten; Associate Professors: C. B. Boss, R. A. Ghiladi, T. B. Gunnoe, E. A. Ison, E. Jakubikova, P. A. Maggard, A. A. Nevzorov, T. I. Smirnova, L. A. Sombers, W. L. Switzer, D. W. Wertz, G. J. Williams; Research Associate Professors: G. S. McCarty; Assistant Professors: W. Chang, D. Fourches, V. Lindsay, J. G. Pierce, C. Proulx, G. Wang, W. W. Weare

The Department of Chemistry offers programs of study leading to the Doctor of Philosophy and Master of Science degrees. These degrees are based on coursework and original research. Many research projects merge disciplines such as chemical/synthetic biology, biophysics/physics, computational science, informatics, photonics/photophysics and materials science with chemistry. General courses as well as advanced and special topics courses are offered.

Admission Requirements: Applicants should have an undergraduate degree in chemistry or in a closely related field with a strong chemistry background. A GPA of at least 3.0 in the sciences is needed for consideration. GRE General Test scores are not required. Admission decisions are made as completed applications are received. For most favorable consideration for the Fall term, all application materials should be received by January 15 (both domestic and international students).

Master's Degree Requirements: The Master of Science (M.S.) degree in chemistry is a research degree that requires six graduate courses, a minimum of 30 credit hours, and research leading to a thesis.

Doctoral Degree Requirements: In the doctoral program, emphasis is placed on original research and a comprehensive knowledge of one's chosen field.

Student Financial Support: Incoming graduate students are supported by departmental teaching assistantships. Outstanding applicants are eligible for supplemental fellowships during their first year of study. Research assistantships are normally available to second-, third-, and fourth-year students. The department also has fellowships for students interested in the area of electronic materials, biotechnology and pharmaceutical and synthetic organic chemistry, as well as travel funds to attend and deliver an oral presentation professional meeting(s).

Other Relevant Information: The Chemistry Department forms part of the College of Sciences. More than one dozen new faculty members have been added in the last ten years, thereby greatly enhancing opportunities for graduate research especially in cutting edge interdisciplinary programs.

Click on **Graduate Courses** for current course information.



Civil, Construction, and Environmental Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Civil Engineering	Y			Y		Y		
Environmental Engineering				Y		Y		

GRADUATE FACULTY

M. A. Barlaz, *Department Head*

Director of Graduate Programs:

S. Ranjithan, Box 7908, 919/515-6979, ranji@ncsu.edu, Civil, Construction, and Environmental Engineering

Distinguished Professors: E. J. Jaselskis; Distinguished University Professors: M. A. Barlaz, H. C. Frey, Y. R. Kim; Named Distinguished Professor: M. Liu; Professors: S. Arumugam, J. W. Baugh, E. D. Brill, F. De Los Reyes, J. Ducoste, M. A. Gabr, M. N. Guddati, A. Gupta, T. Hassan, M. I. Hoit, D. R. Knappe, M. J. Kowalsky, G. F. List, G. Mahinthakumar, J. M. Nau, M. F. Overton, M. S. Rahman, S. Ranjithan, W. J. Rasdorf, N. M. Rouphail, R. Seracino, A. A. Tayebali, J. V. Veliadis, B. M. Williams; Research Professors: B. L. Edge; Adjunct Professors: M. G. Calvi, B. Kasal; Emeritus Professors: M. Amein, R. C. Borden, R. H. Borden, J. F. Ely, J. S. Fisher, A. K. Gupta, K. S. Havner, C. L. Heimbach, Y. Horie, N. P. Khosla, M. L. Leming, V. C. Matzen, S. W. Nunnally, S. Rizkalla, J. R. Stone, C. C. Tung, H. E. Wahls; Emeritus Distinguished Professors: D. W. Johnston; Emeritus Distinguished University Professors: J. M. Hanson, P. Z. Zia; Associate Professors: E. Z. Berglund, J. F. DeCarolis, J. Johnson, M. Pour-Ghaz, B. S. Underwood; Adjunct Associate Professors: C. P. Bobko, T. M. Evans, L. R. Goode, B. J. Schroeder; Emeritus Associate Professors: W. L. Bingham, A. C. Chao, J. C. Smith; Assistant Professors: A. Albert, T. Aziz, E. Bardaka, A. M. Cabas Mijares, D. F. Call, C. A. Castorena, J. C. Dietrich, F. Garcia Menendez, A. P. Grieshop, K. Han, J. P. Kearns, B. M. Montoya, D. R. Obenour, A. C. Ortiz, J. F. Patrick; Research Assistant Professors: J. W. Levis, G. W. Lucier, E. J. Sciaudone; Adjunct Assistant Professors: A. R. de Queiroz, D. J. Findley; Teaching Assistant Professors: K. Salamati

Graduate programs are offered in coastal and water resources engineering, computing and systems, construction engineering and management, environmental engineering, geotechnical and geoenvironmental engineering, mechanics and materials, structural engineering and mechanics, transportation engineering and materials.

Admission Requirements: Normal minimum GPA requirements include 3.0 overall and in the major. Students who do not meet these academic requirements may take graduate courses through the Non Degree Studies program to demonstrate academic ability, but consultation with the Director of Graduate Programs is strongly advised. Applicants without academic experience in civil engineering, construction engineering, or environmental engineering may be required to take undergraduate courses to remove deficiencies, but graduate credit is not given for these courses. The Graduate Record Examination is required for all international applicants and all applicants to the MSCE or MSENE degree programs.

Master's Degree Requirements: Four Master's degrees, requiring a minimum of 30 or 31 credit hours, are available. At least two-thirds of a Master's program should be in a well-defined major area of concentration. The MCE is a non-thesis (Option B) degree with other requirements, such as independent projects or core courses, specified in some areas of specialization. A formal minor is not permitted. The MCE is available both on-campus and through distance education. The MSCE degree requires a thesis and a formal minor is optional. Requirements for the MENE and MSENE are the similar to those for the CE degrees.

Doctoral Degree Requirements: The Ph.D. typically requires one year of full-time course work beyond the master's

degree and research culminating in a dissertation. The program must develop a well-defined major area of concentration and may include supporting courses outside the major or a formal minor in a related field. All specialty areas, including Environmental Engineering, are included in the one Ph.D. program.

Student Financial Support: Departmental teaching and research assistantships are available including coverage of tuition and health insurance. Fellowships -- full or supplemental to an assistantship -- are available for exceptional applicants. All financial aid recipients are selected on merit-based competition with other applicants. Applications requesting financial aid (both U.S. and international) should be submitted early: February 1 for Fall admission and by July 15 for Spring admission.

Click on **Graduate Courses** for current course information.

College of Education Dean's Office

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Teaching					Y			

GRADUATE FACULTY

Directors of Graduate Programs:

- J. K. Lee, Box 7801, 919/513-0126, iklee@ncsu.edu, Teacher Education and Learning Sciences
- J. T. DeCuir-Gunby, Box 7801, 919/513-7669, jessica decuir@ncsu.edu, Teacher Education and Learning Sciences
- K. F. Hollebrands, Box 7801, kfholleb@ncsu.edu, Science, Technology, Engineering, and Mathematics Education
- M. J. Jeffries, Box 7271, mjjeffri@ncsu.edu, Teacher Education and Learning Sciences
- M. R. Blanchard, Box 7801, meg_blanchard@ncsu.edu, Science, Technology, Engineering, and Mathematics Education

Professors: C. L. Crossland, D. A. Cullinan, G. M. Kleiman, H. S. Lee, J. K. Lee, E. J. Sabornie; *Emeritus Professors:* C. A. Pope, R. J. Pritchard; *Associate Professors:* M. R. Blanchard, J. H. Hunt, S. Park, M. M. Thomson, T. A. Walkowiak; *Emeritus Associate Professors:* V. W. DeLuca, S. S. Osborne; *Assistant Professors:* K. Busch, C. Delgado, C. D. Denson, D. L. Gray, C. C. Lee, J. N. Pearson; *Adjunct Assistant Professors:* S. B. Freeman; *Teaching Assistant Professors:* D. E. Benge, C. P. Edgington, M. J. Jeffries, J. G. Koch, P. M. Shumaker Jeffrey

The Master of Arts in Teaching (MAT) program is an accelerated teacher licensure program that leads students to both an initial teaching license and a master's degree in as little as a year and a half of full-time study. The program is distinct in its focus on practice and by conducting some face-to-face classes in a public school facility. The content areas being served by the MAT program are Secondary Math, Science, Social Studies, and English; Middle Grades (Language Arts or Social Studies); English as a Second Language; K-12 Reading; Special Education; and Elementary Education.

For more please see https://ced.ncsu.edu/academics/professional-education/master-of-arts-in-teaching/

The NC Department of Public Instruction has conferred accreditation to the graduate programs in Teacher Education and Learning Sciences. The College of Education is approved any the Council for the Accreditation of Educator Preparation (CAEP).

Admission Requirements: Applicants must have (1) a four-year degree from a college or university that holds regional accreditation, such as SACS; (2) 3.00 GPA or higher in prior work, as required by the Graduate School; (4) an undergraduate degree in the content area/discipline or 24 semester hours/credits in content relevant to the area in which you wish to teach (if you have fewer than 24 hours in a relevant content field, or if your course work does not prepare you adequately to teach the North Carolina curriculum, you may be assigned additional course work to overcome the deficiency).

Applications require original transcripts, 3 letters of recommendation (one of which should speak to teaching potential), a personal essay stating applicant's background and goals, GRE scores (and TOEFL if you have international citizenship), and a completed online application.

Master's Degree Requirements: A total of 30-33 credit hours must be earned for completion of the degree, depending on the particular licensure area. These hours include student teaching for non-lateral entry students.

Student Financial Support: Financial aid is available. Interested students should complete a <u>Financial Aid Federal Student Aid (FAFSA)</u> form.

Click on **Graduate Courses** for current course information.

College of Humanities & Social Sciences

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Communication Rhetoric and Digital Media	Y							

GRADUATE FACULTY

Director of Graduate Programs:

H. J. Burgess, Box 8105, hjburges@ncsu.edu, English

Distinguished University Professors: C. M. Anson; Professors: D. M. Berube, M. P. Carter, D. P. Dannels, V. J. Gallagher, J. Goodwin, M. G. Gordon, J. K. Jameson, M. A. Johnson, H. D. Kellner, W. J. Kinsella, A. M. Penrose, R. L. Schrag, J. Swarts, J. N. Wall, K. S. Zagacki; Emeritus Professors: W. J. Jordan, C. R. Miller; Associate Professors: A. R. Binder, H. J. Burgess, E. A. Craig, A. A. de Souza e Silva, H. Ding, C. J. Fedukovich, P. C. Fyfe, O. Gelley, S. M. Katz, J. Kiwanuka-Tondo, K. A. Kosenko, D. A. Orgeron, D. M. Rieder, S. R. Stein, T. L. Stinson, R. A. Walsh, S. B. Wiley; Emeritus Associate Professors: D. H. Covington, R. S. Dicks; Assistant Professors: G. Bollmer, F. D. Cason, C. Ingraham, A. R. Johnston, N. M. Lee, S. L. Pigg, N. T. Taylor, E. M. Winderman

The Ph.D. Program in Communication, Rhetoric, and Digital Media prepares doctoral students to analyze the social, cultural, rhetorical, philosophical, and political dimensions of information technologies, new communication media, and digital texts and to actively engage digital media through research, criticism, production, and practice.

Students work with program faculty from the departments of Communication and English and with affiliated faculty from departments across the university to study oral, written, visual, computational, and multimodal forms of communication and rhetoric and digital media; to examine the transformation of communication in the context of converging digital media and communication networks; and to address the theoretical challenges of innovative, interdisciplinary research.

Students can create programs of study in areas such as Social Networks and Social Media, Interpersonal Communication, Environmental Communication, Emerging Digital Genres, Multimedia Research in Digital Media, Digital Humanities, Digital Rhetoric, Visual Rhetoric, Digital Media Production, STS and Risk Communication; Organizational Communication, Mobile Communication, Technology and Pedagogy, Game Studies, Online Information Design, Public Relations, Digital Literacies and Composition, Transcultural Communication, Visual Communication, and Cultural Studies.

Faculty guide students in this work by using a broad range of social scientific and humanistic methods in which they specialize. The program offers comprehensive mentoring for professional development, diverse opportunities for teaching experience, and research assistantships associated with grant-funded faculty projects. CRDM faculty and students collaborate with colleagues in science and technology fields across the university and the Research Triangle.

Our graduates have been very successful finding employment in a variety of positions in academia (both at research-intensive universities and at teaching-oriented liberal arts colleges), government and corporate organizations, where there is a growing demand for the interdisciplinary skill sets developed in CRDM.

See our website for more details.

Admission Requirements: Master's degree in Communication, English, Rhetoric, or other relevant field with GPA of 3.0 or better. Master's level work should include one quantitative or qualitative methods course, as well as three courses in an approved <u>disciplinary area</u>. These hours do not count toward the doctoral degree. Disciplinary areas include: composition studies, including writing across the curriculum, interpersonal/group communication, media

studies, organizational communication or public relations, rhetorical studies, and technical communication.

Applicants who are otherwise well qualified may make up these courses after admission. GRE scores no older than five years, three reference letters, a statement of goals and interests, a resume of work experience, and a writing sample are also required for application to the program. The application deadline is December 01.

Ph.D. Degree Requirements: A minimum of 56 hours beyond the Master's degree are required to complete the Ph.D. program: 15 credit hours of core courses, 3 hours of research methods, 6 hours of professional preparation, 12 hours in an elective focus area, and 20 hours of research and dissertation.

Student Financial Support: The CRDM program offers a limited number of Teaching Assistantships, with a stipend, health insurance, and tuition (excluding fees). Teaching Assistants will be assigned according to their interests and qualifications, as well as departmental need, to either the Communication or the English Department with the possibility of teaching in both departments during their course of study. Those who do not have sufficient qualifications to teach in the first semester will participate in a training program. Some Research Assistantships may also be available.

Click on **Graduate Courses** for current course information.

Communication

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Communication				Y				

GRADUATE FACULTY

K. S. Zagacki, Department Head

Directors of Graduate Programs:

A. R. Binder, Box 8104, 919/515-9750, arbinder@ncsu.edu, Communication

J. Kiwanuka-Tondo, Box 8104, ikiwanu@ncsu.edu, Communication

Professors: D. M. Berube, D. P. Dannels, V. J. Gallagher, J. Goodwin, J. K. Jameson, M. A. Johnson, J. Keyton, W. J. Kinsella, R. L. Schrag, K. S. Zagacki; *Emeritus Professors:* E. T. Funkhouser, W. J. Jordan, C. A. Smith; *Associate Professors:* A. R. Binder, E. A. Craig, A. A. de Souza e Silva, D. A. DeJoy, J. Kiwanuka-Tondo, K. A. Kosenko, S. R. Stein, S. B. Wiley; *Emeritus Associate Professors:* D. A. DeJoy, E. T. Funkhouser, R. Leonard, B. L. Russell; *Assistant Professors:* G. Bollmer, A. Cheng, R. J. Hurley, C. Ingraham, N. M. Lee, L. K. Romo, N. T. Taylor, E. M. Winderman; *Teaching Assistant Professors:* E. A. Nelson

The Master of Science program in communication is designed to provide graduate-level expertise for solving problems in modern organizations and social systems from a communication perspective. The curriculum addresses issues concerned with interpersonal, relational and technologically mediated communication systems essential to modern, networked organizations and societies. Its graduates will acquire advanced-level expertise in communication theory, research, and applications that will improve processes and enhance outcomes within and across diverse social systems. The degree prepares students for higher-level positions in communication professions and for advanced degree programs (e.g., Ph.D. programs).

Admission Requirements: Applicants should have a minimum 3.0 GPA in the undergraduate major and a minimum of 3.0 over the last 60 hours of undergraduate work.

Master's Degree Requirements: The degree requires 36 credit hours with a minimum of 27 credit hours taken in communication. Students will be required to complete 9 hours of core requirements, and 27 hours of electives, 9 of which can be taken outside of the department with the approval of the graduate advisor. Students can also take up to 6 internship or independent study credit hours. Students on the thesis track can take up to 6 thesis credit hours.

Click on **Graduate Courses** for current course information.

Comparative Biomedical Sciences

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Comparative Biomedical Sciences	Y			Y				

GRADUATE FACULTY

Directors of Graduate Programs:

K. M. Meurs, Box 8401, 919/513-6213, kmmeurs@ncsu.edu, College of Veterinary Medicine S. L. Jones, Box 8401, 919/513-7722, sam_jones@ncsu.edu, College of Veterinary Medicine

Named Professors: L. Jaykus, H. B. Patisaul, A. A. Tsiatis; Named Distinguished Professors: R. R. Anholt; Professors: K. B. Adler, G. W. Almond, K. L. Anderson, P. Arasu, H. J. Barnes, R. E. Baynes, A. J. Birkenheuer, A. T. Blikslager, J. C. Bonner, R. J. Borski, M. Breen, E. B. Breitschwerdt, T. T. Brown, D. K. Carver, M. T. Correa, P. J. Cray, J. M. Cullen, M. G. Davidson, G. A. Dean, T. C. DeFrancesco, D. C. Dorman, O. J. Fletcher, F. J. Fuller, J. E. Gadsby, B. C. Gilger, J. R. Godwin, J. L. Gookin, C. B. Grindem, J. S. Guy, B. Hammerberg, E. M. Hardie, C. A. Harms, E. C. Hawkins, C. L. Hemenway, J. M. Hinshaw, J. M. Horowitz, S. L. Jones, B. W. Keene, S. W. Kullman, D. X. Lascelles, S. M. Laster, J. M. Law, J. F. Levine, G. A. Lewbart, D. P. Lunn, K. G. Mathews, M. C. McGahan, K. M. Meurs, P. E. Mozdziak, K. R. Munana, S. C. Nelson, N. J. Olby, T. J. Olivry, M. G. Papich, J. A. Piedrahita, L. P. Posner, E. F. Rissman, S. C. Roe, P. L. Sannes, D. Shea, B. Sherry, W. J. Showers, J. E. Smallwood, R. C. Smart, G. W. Smith, M. K. Stoskopf, S. L. Vaden, D. P. Wages, D. W. Watson; Research Professors: A. R. Brody, S. Kennedy-Stoskopf; Clinical Professors: K. E. Linder, R. A. Mansmann, S. L. Marks, W. R. Redding, B. L. Sherman; Adjunct Professors: T. K. Archer, R. S. Balaban, A. E. Bogan, G. R. Burleson, N. J. Caplen, M. W. Dewhirst, K. L. Dreher, L. J. Helman, C. S. Lau, M. N. Martinez Pelsor, D. B. McGavern, R. B. Meeker, J. H. Shelhamer, R. M. Simpson, J. K. Taubenberger, D. W. Threadgill, L. E. Williams; *Emeritus Professors:* L. A. Degernes, H. A. Devine, L. N. Fleisher, R. B. Ford, M. L. Hauck, L. C. Hudson, M. G. Levy, D. H. Ley, D. J. Meuten, N. A. Monteiro-Riviere, W. M. Morrow, P. E. Orndorff, J. F. Roberts, M. C. Roberts, L. P. Tate, D. E. Thrall, M. B. Tompkins, W. Tompkins; *Emeritus Named* Distinguished Professors: J. E. Riviere; Emeritus Distinguished Professors: C. E. Atkins; Associate Professors: C. A. Adin, C. S. Bailey, L. B. Borst, B. A. Breuhaus, K. Cheng, P. Cowen, W. A. Gebreyes, T. Ghashghaei, I. M. Gimeno, B. Hansen, P. R. Hess, M. E. Jacob, M. D. Koci, C. Lanzas, K. F. Lunn, S. K. Lyle, C. L. Mariani, C. J. Mattingly, N. M. Nascone-Yoder, J. A. Neel, X. Peng, M. Rodriguez-Puebla, R. M. Schoenfeld, F. Scholle, M. L. Sikes, B. D. Slenning, L. A. Sombers, S. E. Suter, S. Thakur, S. Tonkonogy, J. A. Yoder; Research Associate Professors: R. G. Maggi; Adjunct Associate Professors: M. L. Alley, B. R. BERRIDGE, R. S. DeWoskin, D. Dixon, J. A. Dye, S. E. Fenton, A. J. Moeser, E. B. Neufeld, R. C. Sills; *Emeritus Associate Professors:* R. E. Fish, S. Y. Gardner, C. R. Swanson, M. D. Whitacre; Assistant Professors: B. S. Akpa, P. Bizikova, B. J. Callahan, E. Crisci, G. P. Cruse, C. M. Dekaney, J. R. Elfenbein, J. E. Fogle, D. M. Foster, L. M. Gonzalez, H. R. Hunt, T. E. Kaeser, A. A. Kedrowicz, A. J. Keung, C. Laplante, J. A. Luff, A. M. Lynch, G. Machado, K. Marsden, K. A. Meiklejohn, J. E. Meitzen, K. M. Messenger, S. K. Mishra, F. M. Mowat, C. C. Nestor, M. W. Nolan, O. A. Petritz, A. J. Planchart, A. San Miguel Delgadillo, L. V. Schnabel, M. K. Sheats, C. M. Theriot, L. C. Van Landeghem, L. A. Villamizar Martinez, H. D. Westermeyer, H. Yoshikawa; Research Assistant Professors: S. K. Nordone, B. A. Qurollo, R. Thomas; Emeritus Research Professors: M. J. Dykstra; Clinical Associate Professors: R. B. Baker, C. A. Fogle; Clinical Assistant Professors: D. B. Adin, N. S. Browne, M. L. Mastromauro, S. E. Musulin, H. Ru, A. M. Snyder, C. A. Stiles, D. A. Stowe, K. M. Tefft, A. Vigani; Visiting Assistant Professors: R. Linnehan; Adjunct Assistant Professors: A. E. Bogan, M. L. Bradley, W. C. Eward, S. E. Fenton, J. M. Giraudel, M. E. Gruen, R. M. Hanel, Y. Kim, M. R. Loomis, D. E. Malarkey, M. W. Wood; Teaching Associate Professors: M. P. Gerard; Teaching Assistant Professors: E. B. Bohorquez, S. E. Robertson

Course offerings and research topics currently include, but are not limited to: cell biology, genomics, infectious diseases, developmental biology, immunology, cardiology, pharmacokinetics, oncology, toxicology, gastroenterology, neuroscience, reproductive physiology, biotechnology, microbiology, aquatic/ wildlife biology, biomedical engineering, endocrinology, molecular biology, pulmonary biology, epidemiology, population medicine, health systems monitoring,

transplantation and radiology.

Admission Requirements: All applications are reviewed by the Graduate Studies Committee of the CBS Program, composed of faculty members representing each area of the graduate program and a graduate student representative. Scores from the GRE are required for admission by all applicants except for applicants with a DVM degree. Candidates who do not have a DVM degree must have a baccalaureate degree or advanced degree from a college or university recognized as standard by a regional or general accrediting agency. Students with a 3.0 (on a 4.0 scale) undergraduate or DVM curriculum with appropriate course background will be considered for admission.

Doctoral Degree Requirements: Credit hour requirements for the Ph.D. degree are determined by the graduate student's committee with approval of the Director of Graduate Programs and the Graduate School.

Student Financial Support: Research assistantships are awarded to qualified candidates on the competitive basis by the College. These are for 12-month periods, and stipends are competitive with those of other programs. These positions are funded by the grants of individual faculty members and the state appropriations to the College and departments.

Other Relevant Information: The program is organized as seven areas of concentration which include: cell biology, immunology, population medicine, infectious diseases, pathology, pharmacology, and neuroscience. These provide extensive interdisciplinary training and maintain a highly effective liaison with graduate programs in other colleges of the university, as well as those of nearby Duke University and the University of North Carolina at Chapel Hill.

Click on **Graduate Courses** for current course information.

Computer Networking

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Computer Networking				Y				

GRADUATE FACULTY

Directors of Graduate Programs:

G. Rouskas, Box 8206, 919/515-3860, rouskas@ncsu.edu, Computer Science

P. D. Franzon, Box 7911, 919/515-7351, paulf@ncsu.edu, Electrical and Computer Engineering

Named Professors: D. D. Stancil; Distinguished Professors: V. Misra, M. A. Vouk; Professors: G. T. Byrd, M. Chow, R. Dutta, D. Y. Eun, L. Lunardi, R. F. Mueller, A. Nilsson, O. Oralkan, H. G. Perros, D. S. Reeves, G. Rouskas, M. L. Sichitiu, M. P. Singh, W. J. Stewart, D. J. Thuente, H. J. Trussell, J. V. Veliadis, I. Viniotis, W. Wang; Research Professors: D. L. Lubkeman; Adjunct Professors: S. C. Ahalt, M. Devetsikiotis, P. Ning, I. Rhee; Associate Professors: M. Becchi, L. Cao, W. H. Enck, I. Guvenc, K. H. Harfoush, N. Lu, X. Shen, D. Vashaee; Research Associate Professors: W. Yu; Adjunct Associate Professors: T. Yu; Assistant Professors: J. J. Adams, M. Daniele, S. Lin, C. J. Parnin, S. Pavlidis, B. Reaves, M. Shahzad, W. Tang, C. Wong, T. Wu; Research Assistant Professors: J. Kim; Adjunct Assistant Professors: K. E. Boyer, B. Callaway, G. W. Howell, R. Mikail; Teaching Associate Professors: S. S. Heckman, D. B. Sturgill; Teaching Assistant Professors: M. Abbasi

The Master of Science in computer networking may be earned through the M.S. with thesis option or through the non-thesis option. Either option may be used as preparation for further graduate study or employment in industrial research, development or design environment, although students planning to continue on for a Ph.D. should discuss the option selected with their advisors.

The Master of Science in Computer Networking is also available as on online degree program. This degree has a non-thesis option, does not require on campus attendance, and may be used in preparation for further graduate student or employment in an industrial research, development or design environment. The program is available to USA residents and to United States military personnel serving overseas and it is offered online through Engineering OnLine.

Admission Requirements: Admissions criteria will adhere to those currently listed on the program website http://networking.ncsu.edu.

Master's Degree Requirements: Computer networking core courses constitute 9 of the 30 minimum credit hours. Students take 12 additional credit hours of computer networking courses from one of four currently defined technical concentration areas: network design, network hardware, network software, or networking services. The remaining 9 credit hours may be taken from an approved management concentration sequence, as additional courses in the computer networking technical concentration areas, or as 6 hours of thesis and 3 credit hours from the list of approved computer networking courses. At least 6 of the 30 credits must come from the 700 level, and non-letter graded courses such as individual studies courses may account for a maximum of 3 credit hours.

CORE COURSES

CSC(ECE) 570 Computer Networks

CSC(ECE) 579 Introduction to Computer Performance Modeling

Select one of the following business courses:

MBA 554 Project Management (Summer, Fall, Spring)

MBA 590 Special Topics: Management Foundations (Fall)

MBA 590 Special Topics: Service Management (Spring)

TECHNICAL CONCENTRATION

CSC 501 Operating System Principles

CSC(ECE) 506 Architecture of Parallel Computers

CSC 510 Software Engineering

CSC 513 E-Commerce technology

CSC(MBA) 516 E-commerce Practicum

CSC 557 Multimedia Technology

CSC(ECE) 573 Internet Protocols

CSC(ECE) 574 Information Systems Security

CSC(ECE) 575 Introduction to Wireless Networking

CSC(ECE) 576 High Speed Networks

CSC 714 Real-Time Computer Systems

CSC 715 Concurrent Software System

CSC 716 Design of Secure and Reliable Systems

CSC 724 Advanced Distributive Systems

CSC 750 Service-Oriented Computing

CSC(ECE) 772 Survivable Networks

CSC(ECE) 773 Advanced Topics in Internet Protocols

CSC(ECE) 774 Network Security

CSC(ECE) 776 Performance Evaluation of Computer Networks

CSC(ECE) 775 Advanced Topics in Wireless Networks

CSC(ECE) 777 Telecommunications Network Design

CSC(ECE) 779 Advanced Computer Performance Modeling

CSC(ECE) 778 Optical Networks

ECE 514 Random Processes

ECE 520 Digital ASIC Design

ECE 521 Computer Design and Technology

ECE 523 Photonics and Optical Communications

ECE 546 VLSI System Design

ECE 733 Digital Electronics

ECE 761 Design Automation for VLSI

MANAGEMENT CONCENTRATION

MBA 503 Survey of Accounting

MBA 514 Technology, Competition and the Law

MBA 520 Managerial Finance

MBA 541 Supply Chain Relationships

MBA 542 Supply Chain Logistics

MBA 543 Planning and Control Systems

MBA 554 Project Management

MBA 576 Technology Evaluation and Commercialization Concepts

MBA 577 High Technology Entrepreneurship

MBA 590 Special Topics: Decision Support Systems

MBA 590 Special Topics: Business Process Analysis and Design

MBA 590 Special Topics: Business Relationship Management

MBA 590 Special Topics: Consulting

MBA 590 Special Topics: Service Management

Computer Science

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Computer Science	Y			Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

G. Rouskas, Box 8206, 919/515-3860, rouskas@ncsu.edu, Computer Science

Named Distinguished Professors: J. Doyle; Named Distinguished University Professors: M. Rappa; Distinguished Professors: J. C. Lester II, T. K. Miller, M. A. Vouk; Distinguished University Professors: D. L. Bitzer; Professors: T. M. Barnes, G. T. Byrd, R. Dutta, C. G. Healey, E. L. Kaltofen, H. Krim, G. Mahinthakumar, T. J. Menzies, R. F. Mueller, H. G. Perros, D. S. Reeves, E. Rotenberg, G. Rouskas, N. F. Samatova, C. D. Savage, M. L. Sichitiu, M. P. Singh, Y. Solihin, R. A. St. Amant, M. F. Stallmann, W. J. Stewart, D. J. Thuente, I. Viniotis, W. Wang, L. A. Williams; Research Professors: P. A. Dreher; Visiting Research Professors: F. Brglez; Adjunct Professors: S. C. Ahalt, A. I. Anton, M. Devetsikiotis, S. P. Iyer, G. Lazzi, P. Ning, I. Rhee, X. Wang, J. T. Whitted, R. M. Young; Emeritus Professors: W. Chou, E. W. Davis Jr, R. J. Fornaro, J. C. Glass, D. F. McAllister, C. Meyer, W. E. Snyder, A. L. Tharp; Associate Professors: D. R. Bahler, R. Y. Chirkova, A. G. Dean, W. H. Enck, V. W. Freeh, E. F. Gehringer, X. Gu, K. H. Harfoush, S. Heber, A. H. Jhala, E. R. Murphy-Hill, K. Ogan, D. L. Roberts, X. Shen, V. B. Sullivan, R. R. Vatsavai, B. A. Watson; Adjunct Associate Professors: X. Jiang, X. Ma, A. J. Rindos, J. N. Staddon, T. Xie, T. Yu; Emeritus Associate Professors: T. L. Honeycutt, J. S. Scroggs; Assistant Professors: M. Chi, G. Jin, A. Kapravelos, C. F. Lynch, C. Martens, C. J. Parnin, B. Reaves, A. Scafuro, M. Shahzad, K. T. Stolee, H. Tseng; Adjunct Assistant Professors: K. E. Boyer, G. W. Howell, M. D. Kowolenko, B. W. Mott, A. T. Rivers, J. P. Rowe, J. B. Slankas, D. R. Wright, Y. Xin; *Teaching Associate Professors*: S. S. Heckman, D. B. Sturgill; *Teaching Assistant Professors*: S. M. Balik, T. Battestilli, J. T. King, K. Oduor, J. Y. Schmidt; Lecturers: A. J. Rindos

The Department of Computer Science is one of the leading computer science departments in the United States. Twenty three of our faculty have received prestigious NSF CAREER development awards. Total research expenditures have quadrupled over the last several years. The graduate program has more than 700 students, of whom more than 200 are PhD students. The faculty has broad-ranging research strengths that include *Theory* (Algorithms, Theory of Computation); *Systems* (Computer Architectures and Operating Systems, Embedded and Real-Time Systems, Parallel and Distributed Systems, Scientific and High Performance Computing); *Artificial Intelligence* (Intelligent Agents, Data-Mining, Information and Knowledge Discovery, Engineering and Management; eCommerce Technologies; Information Visualization, Graphics and Human-Computer Interaction); *Networks* (Networking, Performance Evaluation, Sensor Networks, Protocols); *Security* (Software and Network Systems Security, Information Assurance, Privacy); *Software Engineering* (Requirements, Formal Methods, Reliability Engineering, Process and Methods, Programming Languages); and *Computer-Based Education*. Areas of strength in applied research include bioinformatics, scientific computation, e-commerce and data mining.

Admission Requirements: Minimum application requirements include an accredited Bachelor's degree with at least a B average and computer science and mathematics course work similar to an undergraduate Computer Science major. Applicants must submit scores for the GRE General Tests.

Master's Degree Requirements: The M.S. requires 31 graduate credits including at least one course from each of the core areas of Theory (CSC 505, 512, 565, 579, 580, and 707) and Systems (CSC 501, 506, 510, 520, 540, 562, and 570), and the successful defense of a thesis. The advisory committee may waive the thesis requirement for students planning to pursue the Ph.D. who pass the Ph.D. written preliminary examination and complete specified additional course work in lieu of thesis research. The Master of Computer Science (M.C.S.) is a professional degree granted upon successful completion of 31 hours of course work, including three core courses with at least one from each of the two core areas.

The M.C.S. degree is offered as an on-campus program or as a Distance Education program.

Doctoral Degree Requirements: Ph.D. students normally complete 72 semester hours of post-baccalaureate course and research work. They must also complete at least two courses from each of the two core areas noted above with at least a 3.5 GPA, and two 700-level CSC courses, individualized in-depth written and oral preliminary examinations, and a public defense of their dissertation describing substantial, original, and independent scholarly work.

Student Financial Support: During the 2015-2016 academic year, at least 180 students were awarded teaching or research assistantships. The Department also offers numerous supplemental fellowships, and has approximately 10 students on full-time fellowships. In addition, students have many opportunities to work at leading industry and government research labs and high-tech employers, both locally and throughout the United States.

Other Relevant Information: Graduates at all levels are highly respected and aggressively recruited. They enjoy successful careers locally and throughout the country and the world. Many Master's degree graduates begin or continue careers in advanced networking or software development in the Research Triangle Park and on the West Coast, at companies such as IBM, Microsoft, Google, SAS, Intel, Netapp, Amazon, Facebook, and Cisco. Many recent Ph.D.s have positions of technical leadership in well-known large companies and prominent research laboratories, including Google, Microsoft Research, and IBM Research Labs, or have obtained tenure-track faculty positions at Research I universities.

Click on **Graduate Courses** for current course information.

Creative Writing

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Creative Writing								Y

GRADUATE FACULTY

Directors of Graduate Programs:

B. M. Boggs, Box 8105, bmboggs@ncsu.edu, English J. S. Mulholland, Box 8105, jsmulhol@ncsu.edu, English

Distinguished Professors: A. H. Harrison; Distinguished University Professors: C. M. Anson; Professors: W. W. Barnhardt, M. P. Carter, M. G. Gordon, J. M. Grimwood, H. D. Kellner, J. J. Kessel, D. L. Laux, L. S. May, A. M. Penrose, S. M. Setzer, L. R. Severin, A. F. Stein, J. Swarts, E. R. Thomas, J. F. Thompson, J. N. Wall; Professors of the Practice: J. C. McCorkle; Emeritus Professors: B. J. Baines, J. Balaban, G. W. Barrax, P. E. Blank, J. W. Clark, J. D. Durant, L. T. Holley, J. J. Kessel, A. S. Knowles, L. H. MacKethan, W. E. Meyers, C. A. Prioli, J. J. Small, L. Smith, J. J. Smoot, M. H. Thuente, R. V. Young; Associate Professors: A. Baker, B. A. Bennett, B. M. Boggs, A. Bolonyai, C. J. Fedukovich, S. M. Katz, R. C. Kochersberger, J. D. Morillo, D. A. Orgeron, D. M. Rieder; Emeritus Associate

Professors: D. H. Covington, R. S. Dicks, M. F. King, R. C. Kochersberger, C. E. Moore, H. C. West; Assistant Professors: E. C. Corral; Assistant Professors of the Practice: J. H. Millar; Teaching Associate Professors: B.

Blackley

The Department of English offers a two-year studio/academic program in fiction or poetry leading to the Master of Fine Arts degree. The program provides an opportunity for students of superior and demonstrated ability in imaginative writing to develop their skills and critical judgment through the practice of writing and the study of literature. The aim of the program is to prepare talented students for careers in writing. Degree candidates are expected to produce a booklength work of literary value and publishable quality.

Admission Requirements: Overall GPA of 3.0 or higher; applicants should submit GRE scores (general aptitude and analytical writing); one official transcript of all undergraduate and graduate work; three letters of recommendation; and two writing samples, one creative, one critical. Creative sample: for fiction, two short stories, or for a novel, three chapters (or one chapter and a short story) totaling 25-40 pages; for poetry, 12 complete poems. Critical sample: no more than 15 pages of writing demonstrating your ability to succeed in graduate-level literature classes, a required part of the MFA curriculum.

Requirements for the MFA in Creative Writing: Candidates for the MFA degree must complete a total of 36 credits. Eighteen of these are taken in the area of writing specialization. These include workshop courses (12 credits) and thesis (6 credits). The remaining credits are taken in literature (6 credits) and elective areas (12 credits, including 6 credit hours of teaching preparation for those on a composition teaching assistantship). In their final semester, students must pass a comprehensive written examination on writing craft, based on a book list selected jointly by the student and the faculty. The final thesis must be a book-length manuscript in the student's field of interest. In fiction, an approximate 200 pages are expected; in poetry, 60 pages. See program website for specific requirements by concentration.

Student Financial Support: All students admitted to the MFA program are eligible for <u>teaching assistantships</u>. TAs in the MFA train to teach undergraduate composition courses, and a few selected creative writing classes.

Other Relevant Information: Application deadline is February 1. Students are admitted for the fall semester only.

The English department has a long tradition of academic and literary excellence, including its heritage of writers from Guy Owen to Lee Smith. The strength of NCSU in the sciences offers students the opportunity to do creative work that

engages with issues of technology and its effect on individuals and institutions that are not typically addressed in fine arts programs.

Through the NC State Literary Readings Series, the department sponsors readings and visits by distinguished poets, fiction and non-fiction writers.

Click on **Graduate Courses** for current course information.

Crop and Soil Sciences

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Crop Science	Y			Y		Y		
Soil Science	Y			Y		Y		

GRADUATE FACULTY

Directors of Graduate Programs:

D. C. Bowman, Box 7620, 919/515-2085, <u>dan_bowman@ncsu.edu</u>, Crop and Soil Sciences T. J. Smyth, Box 7620, 919/515-2838, <u>jot_smyth@ncsu.edu</u>, Crop and Soil Sciences

Named Professors: J. M. Alonso, R. E. Dewey, L. R. Fisher, D. L. Hesterberg, T. W. Rufty; Named Distinguished Professors: J. T. Brake, M. J. Vepraskas; Distinguished University Professors: M. M. Goodman, W. F. Thompson; *Professors:* A. Amoozegar, D. C. Bowman, S. W. Broome, R. J. Cooper, D. A. Crouse, C. R. Crozier, E. J. Dunphy, K. L. Edmisten, G. E. Fernandez, C. H. Haigler, J. L. Havlin, R. W. Heiniger, J. L. Heitman, M. Hyman, F. Isik, T. G. Isleib, D. L. Jordan, R. S. Lewis, R. A. McLaughlin, G. G. McRae, G. L. Miller, M. Mullen, J. P. Murphy, D. L. Osmond, R. P. Patterson, C. H. Peacock, R. Qu, R. J. Richardson, R. C. Rufty, W. Shi, T. J. Smyth, H. T. Stalker, R. Wells, T. R. Wentworth, E. B. Wilson, F. H. Yelverton; *USDA Professors*: G. Brown-Guedira, K. O. Burkey, T. E. Carter, A. J. Franzluebbers, J. B. Holland, D. P. Livingston, D. S. Marshall, R. M. Mian, R. W. Zobel; Adjunct Professors: K. D. Getsinger, R. Liebl, T. R. Sinclair, R. W. Zobel; Emeritus Named Professors: W. K. Collins, G. F. Peedin, W. D. Smith, J. C. Wynne, A. C. York; *Emeritus Professors:* D. T. Bowman, A. H. Bruneau, D. K. Cassel, H. D. Coble, W. A. Cope, F. T. Corbin, D. A. Emery, J. T. Green, J. D. Gregory, H. D. Gross, D. W. Israel, G. L. Jones, H. J. Kleiss, J. A. Lee, W. M. Lewis, H. M. Linker, R. C. Long, J. Luginbuhl, J. P. Mueller, W. P. Robarge, J. F. Spears, G. A. Sullivan, M. G. Wagger, J. B. Weber, A. K. Weissinger, P. R. Weisz, A. D. Worsham; *Emeritus Named* Distinguished Professors: J. W. Gilliam, R. W. Skaggs, E. A. Wernsman; Emeritus Distinguished Professors: S. W. Buol; Associate Professors: J. D. Burton, O. W. Duckworth, W. J. Everman, A. K. Graves, V. Kuraparthy, C. Maltecca, S. R. Milla-Lewis, S. C. Reberg-Horton, M. S. Schroeder-Moreno, L. J. Unruh Snyder, J. G. White; *Research Associate* Professors: D. G. Seth Carley; USDA Associate Professors: M. D. Krakowsky; Emeritus USDA Professors: J. W. Burton, D. L. Thompson; Adjunct Associate Professors: M. D. Netherland, M. L. Polizzotto; Emeritus Associate Professors: D. A. Danehower, R. D. Keys, J. P. Lilly, G. C. Naderman; Assistant Professors: M. S. Castillo, R. L. Cook, T. W. Gannon, T. G. Gardner, A. M. Johnson, R. G. Leon Gonzalez, A. R. Post, M. C. Vann; USDA Assistant Professors: A. M. Hulse-Kemp, A. M. Locke, E. Taliercio; Adjunct Assistant Professors: D. H. Hardy, R. O. Maguire, L. M. Miranda; Extension Associate Professors: G. D. Collins; Teaching Associate Professors: C. V. Jordan; Lecturers: J. T. Walker

The Department of Crop and Soil Sciences offers programs of study leading to the Master of Crop Science (M.C.S.), Master of Science (M.S.) and Doctorate of Philosophy (Ph.D.) degrees. The M.S. and Ph.D. programs are based upon original research while the M.C.S degree is a non-thesis degree program. Areas of study in the department include plant breeding, genetics and molecular biology; crop production, management, chemistry and physiology; sustainable agriculture and agro-ecology; turfgrass management and science; integrated pest management, weed science and crop modeling.

Excellent facilities for graduate education are available, including wet and dry labs for preparation and analysis of plant and soil samples, cold storage facilities, greenhouses, controlled environmental chambers, computing facilities and the Southeastern Plant Environment Laboratories (Phytotron) for highly controlled plant environmental research. Agriculturally, North Carolina has a wide array of environments and soils for field research. This includes the sandy coastal plains and black lands of eastern NC, the central Piedmont with its clay soils, and the mountains of NC with their unique environments and soils. University and State research stations are located strategically throughout each of

these regions and are widely used for field research.

Crop Science programs also benefit from strong cooperative ties with other departments and institutions. Graduate students in Crop Science work cooperatively with and/or obtain instruction in the Departments of Animal Science, Biochemistry, Chemistry, Computer Science, Entomology, Horticultural Science, Genetics, Mathematics, Microbiology, Plant Biology, Plant Pathology, Soil Science and Statistics. Cooperative efforts link our programs with faculty at a number of land grant and international universities as well as with leaders in agribusiness and environmental protection.

Admissions Requirements: Prospective students should be graduates of an accredited university with a major in agronomy, animal science, biology, crop science, genetics, horticulture, plant science or related field of study. Graduates from other degree programs will be considered but may be asked to make up certain undergraduate deficiencies. Acceptance of applicants is competitive and limited by program space and funding. Applicants should have a minimum of a 3.0 (out of 4.0) GPA and minimum GRE percentile scores of 40 on the verbal and quantitative portions of the exam. Exceptions to these guidelines may be made for students with special backgrounds, abilities or interests.

Master's Degree Requirements: Master of Science Degree: Requirements include a minimum of 30 semester hours of course work, including one hour of Seminar (CS 601) and six hours of Statistics (ST 511 and ST 512 or equivalent), completion of a thesis, a comprehensive oral examination and presentation of an exit seminar. Master of Crop Science Degree: M.C.S. requirements include a minimum of 36 semester hours of graduate work with a minimum of four, but no more than six, credit hours of Special Problems (CS 620). Additionally, three hours of Statistics (ST 511 or equivalent), a comprehensive oral examination and presentation of an exit seminar are also required.

Doctoral Degree Requirements: Ph.D. Candidates must demonstrate an ability to conduct original research and scholarly work at the highest level and produce an acceptable dissertation. Doctoral students must take a minimum of 72 graduate credit hours beyond the Bachelor's degree. They must also pass a preliminary examination (written and oral components) and a final oral examination. Presentation of an exit seminar is required.

Student Financial Support: Graduate assistantships will be awarded to qualified applicants depending on funding availability and program space. Tuition and health insurance are typically covered through the Graduate Student Support Plan for most students granted assistantships.

Other Relevant Information: A thesis (M.S. and Ph.D.) or special problem (Master of Crop Science) outline and Plan of Graduate Work should be submitted to the Director of Graduate Programs by the end of the first regular (spring or fall) semester.

Click on **Graduate Courses** for current course information.

Design

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
<u>Design</u>	Y		Y					

GRADUATE FACULTY

Directors of Graduate Programs:

M. E. Deming, Box 7701, 919/515-3876, medeming@ncsu.edu, Design S. Cho, Box 7701, scho3@ncsu.edu, Architecture

Professors: R. F. Abrams, T. M. Barrie, E. H. Bressler, C. D. Cox, M. E. Deming, D. Gonzales Crisp, D. B. Hill, H. Holljes, S. B. Joines, T. Liu, R. C. Moore, W. Place, A. R. Rice, J. M. Scearce; Professors of the Practice: M. E. Purnell; Emeritus Professors: M. J. Davis, H. Khachatoorian, P. Tesar; Associate Professors: H. S. Armstrong, K. M. Boone, T. W. Buie, S. Cho, J. Coll-Barreu, P. J. Fitzgerald, R. A. Flinchum, A. A. Fox, C. Gill, D. K. Gulling, J. Hu, B. W. Laffitte, F. H. Magallanes, P. E. Morgado, S. G. Queen, K. J. Schaffer; Research Associate Professors: P. K. Baran, N. G. Cosco; Assistant Professors: B. Erdim, D. A. Ham, D. K. Littlejohn, C. Mouat Croxatto, C. Pasalar, M. O. Peterson, K. A. Umstead; Research Assistant Professors: T. R. Rider

At the College of Design, NC State University, the mission of the Doctoral Programs in Design (comprising both the PhD and D.Des programs) is to improve the human condition through design research and scholarship. This mission is built in equal parts on the recognition of a fertile common ground among the design disciplines and on the need for specificity and depth within them.

The Doctor of Philosophy (Ph.D.) in Design program values a broad range of research interests that aim to improve the human condition through design. The aim of the Ph.D. in Design is to prepare students holding previous degrees in design disciplines to conduct research in the areas of: design for health and well-being; design for learning; design for sustainability; design and technology; design and the urban context; design methods; and design history and criticism.

The Doctor of Design (D.Des.) program provides distance-education opportunities for established design professionals to conduct original investigations using design practices, cases, and methods. D.Des. students pursue practice-based design research in support of professions creating the artifacts, communications, environments, organizing structures, and systems of the future.

Both programs provide a forum for connecting design research to the needs of society, by promoting the application of new knowledge in design and addressing design impacts on larger systems.

Admission Requirements: For admission to both the Ph.D. and D.Des programs, submit official transcripts from earned undergraduate and graduate degrees (two minimum); three letters of reference; TOEFL scores (for international students); residency statement (US residents only); College of Design personal data form; statement of research intent; and portfolio.

GRE scores are required for all Ph.D. applicants, however, if reasoning and writing ability is clearly demonstrated through previous graduate degrees, or professional or academic work products and impact, D.Des. applicants may ask for a waiver of GRE scores.

Doctoral Degree Requirements: Both programs of study require a minimum of 54 credit hours of graduate work beyond the Master's degree.

For the Ph.D. degree, 18 credits (of 54) comprise independent research and dissertation credits with the remaining 36

hours earned from coursework completed in the Ph.D. program. In addition, for Ph.D. students three (3) 1-credit colloquia are required.

For the D.Des. degree, the requirement is just the opposite: 18 credits (of 54) must be earned from formal coursework completed in the D.Des. program, while the remaining 36 hours comprise independent research and dissertation credits. In addition, for D.Des. students, a structured weeklong immersion on campus is required for each semester that a student is enrolled (either part- or full-time).

Student Financial Support: Teaching and research assistantships are available only to Ph.D. students; in addition, those students receiving some form of research assistantship may also receive tuition remission. Assistantships are awarded on the recommendation of the program director in consultation with the faculty.

The Doctor of Design program applies a self-funded model. Therefore no financial aid is available to D.Des. students through College or University institutional channels.

Other Relevant Information: Full admission is permitted only after acceptable applicants have secured/been assigned an advisor.

Click on **Graduate Courses** for current course information.

Economics

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Agricultural and Resource Economics				Y				
<u>Economics</u>	Y			Y		Y		

GRADUATE FACULTY

Directors of Graduate Programs:

S. G. Allen, Box 8114, 919/515-5584, <u>steve_allen@ncsu.edu</u>, Business Management X. Zheng, Box 8109, 919/515-4543, <u>xiaoyong_zheng@ncsu.edu</u>, Agriculture and Resource Economics

Named Professors: A. B. Brown, D. A. Dickey; Named Distinguished Professors: B. K. Goodwin, J. M. Nason, W. N. Thurman, M. L. Walden; Professors: S. G. Allen, J. C. Beghin, R. L. Clark, L. A. Craig, P. L. Fackler, A. R. Hall, D. N. Hyman, C. R. Knoeber, D. K. Pearce, N. E. Piggott, R. M. Rejesus, M. A. Renkow, J. J. Seater, E. O. Sills, L. O. Taylor, T. Vukina, M. D. Walker, K. D. Zering, X. Zheng; Adjunct Professors: T. P. Holmes; Emeritus Professors: G. A. Benson, R. H. Bernhard, G. A. Carlson, L. E. Danielson, J. E. Easley, E. W. Erickson, E. A. Estes, D. Fisher, D. J. Flath, T. J. Grennes, D. M. Holthausen, T. Johnson, C. E. Joyner, H. J. Kleiss, J. S. Lapp, M. C. Marra, C. L. Moore, R. B. Palmquist, C. D. Safley, R. A. Schrimper, W. J. Wessels; Emeritus Distinguished University Professors: V. K. Smith; Associate Professors: R. G. Hammond, I. T. Kandilov, M. B. McElroy, K. Mitchell, M. S. Morrill, T. S. Morrill, A. W. Oltmans, D. Pelletier, N. J. Traum, R. H. von Haefen; Adjunct Associate Professors: C. M. Newmark; Emeritus Associate Professors: D. S. Ball, A. E. Headen, E. A. McDermed; Assistant Professors: K. A. Boys, Z. S. Brown, U. Dur, G. Fiori, R. P. Guiteras, I. Kalnina, Z. Li; Adjunct Assistant Professors: B. J. Hubbell, D. J. MacNair; Teaching Professors: P. Cwik, T. C. Morant, B. L. Puryear; Teaching Assistant Professors: J. Treme, C. E. Youngblood; Lecturers: B. L. Puryear

The graduate program in economics is a joint program of the Department of Agricultural and Resource Economics in the College of Agriculture and Life Sciences and the Department of Economics in the Poole College of Management. Emphasis is placed on economic theory and quantitative economic analysis and their application to economic problems. Master's students can choose between the terminal master's track and the PhD-prep track. In both tracks, they may further tailor their experience by choosing to concentrate in one or multiple of the four fields: financial/macro econometrics; international trade and development; natural resource and environmental economics and economic policy. Students can also choose between engaging in a research project culminating in a thesis (the Master of Science in economics degree) and simply pursuing a coursework only option (the Master of Economics degree). The major fields of specialization for doctoral students are: agricultural economics, development economics, econometrics, environmental/resource economics, industrial organization, international economics, labor economics, macro-monetary economics and microeconomic theory and experimental/behavioral economics.

Admission Requirements: Minimum background for admission for Master's study includes intermediate microeconomics and intermediate macroeconomics, calculus I and calculus II, and one semester of statistics (econometrics courses included). For doctoral study, prerequisites are intermediate microeconomics, intermediate macroeconomics, calculus I-III, linear algebra, and a course in mathematical statistics. GRE scores are required for doctoral applicants only.

Master's Degree Requirements: Both the Master of Science in economics and the Master of Economics degrees require core courses in microeconomics, macroeconomics and econometrics. Each degree also carries additional elective requirements. The M.S. degree requires a thesis. Both degrees offer two tracks: a terminal master's track and a PhD-prep track. Specific course requirements for both the Master of Science and the Master of Economics can be found on the Graduate Program in Economics website. Both Master's degrees require a total of 30 credit hours. Accelerated Bachelor's/Master's degree programs are available for non-thesis options.

Doctoral Degree Requirements: The Ph.D. program requires a minimum of 72 hours and at least six semesters of work beyond the Bachelor's degree. Students must pass written comprehensive examinations in microeconomics and macroeconomics. Course requirements include two semesters of econometrics and six field courses.

Student Financial Support: Research and teaching assistantships are available and are awarded competitively on a merit basis. These assistantships go to Ph.D. students only; there is no financial support for Master's students. Prospective doctoral students who wish to be considered for assistantships should apply for fall admission by January 1.

Other Relevant Information: Graduate students on financial support are provided office space or study carrels. Other students may be assigned study carrels if available. All students have access to the economics graduate student computer lab.

Click on **Graduate Courses** for current course information.

Educational Leadership, Policy, and Human Development

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Adult and Community College Education		Y		Y			Y	

GRADUATE FACULTY

Directors of Graduate Programs:

- L. D. Fusarelli, Box 7801, 919/513-0507, lance_fusarelli@ncsu.edu, Educational Leadership, Policy and Human Development
- S. Ting, Box 7801, 919/515-6362, ting@ncsu.edu, Educational Leadership, Policy and Human Development

Professors: D. Akroyd, T. W. Cawthon, A. J. Jaeger, P. A. Pasque, S. R. Porter, A. N. Rockenbach, P. D. Umbach;
Professors of the Practice: R. R. Garcia, R. G. Templin; Adjunct Professors: L. Gonzalez-Sullivan, J. L. Gwyer, D. G. Oblinger, B. A. Olson, R. S. Ralls; Emeritus Named Professors: C. E. Kasworm; Emeritus Professors: G. L. Carter, J. C. Glass, G. B. Vaughan; Emeritus Named Distinguished Professors: G. A. Baker; Associate Professors: S. J. Barcinas, J. E. Bartlett, T. A. Bowles, J. G. Gayles, B. S. Mehlenbacher, T. V. Young; Adjunct Associate Professors: S. C. Faircloth, B. I. Mallette; Emeritus Associate Professors: P. F. Bitting; Assistant Professors: L. R. Bass, A. B. Bowden, T. A. Drake, C. D. Hoggan, A. M. Jacob; Adjunct Assistant Professors: K. A. Boham, L. M. Chapman, D. K. Deardorff, K. G. Dixon, K. L. Ender, C. C. Figuers, J. E. Fleming, B. J. Frye, E. V. Griffin, C. O. Grochowski, L. D. Hunt, M. B. Jackowski, L. D. Krute, P. Lari, K. D. Lohr, D. D. McGraw, W. D. McInnis, W. D. Milheim, L. Moneta, S. E. Morrissey, M. H. Nadelman, A. B. Orders, R. R. Parker, D. L. Reichard, M. E. Rittling, L. L. Rouse, S. C. Scott, M. A. Valek, J. W. Wescott, S. W. Williams, S. Williams, C. L. Zelna; Teaching Professors: D. D. Chapman; Teaching Assistant Professors: M. E. Bartlett, W. D. Milheim, F. P. Riddick, C. L. Warren, C. C. Williams; Lecturers: L. G. Hervey

The Adult and Community College Education program area is a unique program in its emphasis on serving the spectrum of both formal and informal adult learning organizations, and its inclusion of administrative, instructional and technology-related leadership within a practitioner preparation program. Based on a land-grant, Research Extensive University, the department reflects the tripartite commitment to quality instruction, research scholarship and service outreach.

The Master's degree in Adult and Community College Education is one-of-a-kind as its primary commitment is to part-time students who are full-time working professionals. Full-time students are eligible for consideration to receive full funding through scholarships, fellowships and research and teaching assistantships, which allow our students to work with top faculty on cutting-edge projects. To meet the needs of full- and part-time students, most courses are offered once a week during late afternoon or evening hours. Some courses are regularly available during summer sessions and weekends and through distance education technologies. The Master in Adult and Community College Education provides opportunities to specialize in one of three areas: Adult and Continuing Professional Education, Community College Teaching, or Health Professions Education.

Admission Requirements: Applications for admission are submitted through the Graduate School, accepted year-round and are applicable for the first available term. We accept students from a wide range of disciplinary backgrounds. To qualify for admission, applicants must have a bachelor's degree from an accredited institution of higher education in any field. International applicants must also have a TOEFL score of 100 or higher. Admission decisions are based on several criteria, including undergraduate GPA, work history and interest in the field.

Student Financial Support: To be eligible for financial aid, students must be enrolled in Master's or Doctoral degree programs offered by the University. Unfortunately there is no financial aid available for Graduate Certificate students. Occasionally graduate assistantships are available for full time students in our degree programs. Please check with your

advisor about assistantship opportunities. We recommend that you contact the Office of Scholarships and Financial Aid to find out what other options are available.

Click on **Graduate Courses** for current course information.

Electrical and Computer Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Computer Engineering	Y			Y				

GRADUATE FACULTY

Director of Graduate Programs:

P. D. Franzon, Box 7911, 919/515-7351, paulf@ncsu.edu, Electrical and Computer Engineering

Named Professors: S. A. Bedair, I. Husain, D. D. Stancil, M. B. Steer; Named Distinguished Professors: J. Narayan, R. J. Trew; *Distinguished Professors:* P. D. Franzon, N. A. Masnari, T. K. Miller, V. Misra, H. T. Nagle, M. A. Vouk; Distinguished University Professors: D. E. Aspnes, B. J. Baliga, D. L. Bitzer; Professors: M. E. Baran, S. Bhattacharya, G. T. Byrd, M. Chow, H. Dai, W. R. Davis, A. Duel-Hallen, M. J. Escuti, D. Y. Eun, J. J. Grainger, E. Grant, B. L. Hughes, K. W. Kim, R. M. Kolbas, H. Krim, L. Lunardi, R. F. Mueller, J. F. Muth, A. Nilsson, O. Oralkan, M. C. Ozturk, H. G. Perros, D. S. Reeves, E. Rotenberg, G. Rouskas, M. L. Sichitiu, Y. Solihin, M. F. Stallmann, J. K. Townsend, H. J. Trussell, J. V. Veliadis, I. Viniotis, W. Wang, F. Wu, H. Zhou; Research Professors: D. C. Hopkins, D. L. Lubkeman, T. M. Paskova; *Professors of the Practice*: L. W. White; *Adjunct Professors*: M. Devetsikiotis, W. C. Holton, Q. HUANG, G. J. Iafrate, G. Lazzi, T. M. Paskova, I. Rhee; *Emeritus Named Professors:* J. R. Hauser; Emeritus Professors: W. E. Alexander, T. H. Glisson, M. A. Littlejohn, D. F. McAllister, C. M. Osburn, S. A. Rajala, W. E. Snyder; Associate Professors: S. T. Alexander, D. Z. Baron, M. Becchi, A. Y. Bozkurt, L. Cao, A. Chakrabortty, R. Y. Chirkova, A. G. Dean, B. A. Floyd, E. F. Gehringer, I. Guvenc, K. H. Harfoush, D. S. Lalush, E. Lobaton, N. Lu, S. M. Lukic, D. Ricketts, X. Shen, J. Tuck, D. Vashaee, G. M. Walker, C. M. Williams; Research Associate Professors: W. Yu; Adjunct Associate Professors: A. J. Rindos, T. Xie, M. Yadav; Emeritus Associate Professors: G. F. Bland, D. H. Covington, W. C. Peterson; Assistant Professors: J. J. Adams, M. Daniele, M. W. Kudenov, S. Lin, S. Pavlidis, B. Reaves, M. Shahzad, W. Tang, H. Tseng, C. Wong, T. Wu; Research Assistant Professors: J. Kim, B. Lee; Adjunct Assistant Professors: B. Callaway, R. Mikail; Teaching Professors: S. D. Jackson; Teaching Associate Professors: L. J. Bottomley, B. Evans, H. Orun, M. Yadav, D. G. Yu; *Teaching Assistant Professors:* M. Abbasi; *Lecturers:* A. J. Rindos

The Master of Science in Computer Engineering may be earned with thesis option or through the non-thesis option. Either option may be used as preparation for further graduate study or employment in industrial research, development or design.

Also a strong Ph.D. program is available for those who wish to pursue a research and/or teaching career in Industry, Government or Academia.

Admissions Requirements: Admission to the M.S. program requires a B.S. in electrical engineering, computer engineering or computer science, and an overall undergraduate GPA of at least 3.0. For non-native English speakers, the minimum acceptable TOEFL score for admission to the M.S. program is 90 (minimum 18 in each area, with minimum of 19 on Speaking). The GRE is required for all programs of study but may be waived upon request for graduates from US Universities (see below). Admission is further limited by available room in the elected program of study. Meeting the above minimum requirements alone does not guarantee admission.

Applicants to the Master's and PhD programs who do not have a Bachelor's degree in Electrical Engineering or Computer Engineering, but have a closely related degree from an accredited college or university, must have taken the following pre-requisite courses: courses equivalent to ECE 109, ECE 209, ECE 212, ECE 220, ECE 301, ECE 302, ECE 309 and CSC 226.

GRE scores within the last four years of the date of anticipated admission. Guideline for minimal GRE percentile scores

are 70 percentile verbal, 90 percentile quantitative, and 50 percentile analytical or writing. GRE scores for students who are graduates from NCSU may be waived. They also might be waived for graduates from US ABET accredited programs with good GPAs.

All international applicants from non English speaking countries must submit TOEFL scores. The TOEFL must have been taken within two years of the date of anticipated admission. On the TOEFL iBT, students must have a minimum of 18 on each section of the test with a minimum total of 90. Scores on previous versions of the TOEFL are considered with the same qualitative standard. On the IELTS, we require a minimum score of 6.5 in each section. This requirement also applies to US citizens whose principal language of instruction has not been English (for example, most applicants from Puerto Rico and the Virgin Islands).

TOEFL - institution code 5496; department code 66 GRE - institution code 5496; department code 1203

Admission to the Ph.D. program requires a B.S. or M.S. in electrical engineering, computer engineering or computer science with an expectation of an overall GPA of at least 3.25. The minimum acceptable TOEFL score for admission to the Ph.D. program is 90 (minimum 18 in each area, with minimum of 19 on Speaking). The GRE is required for all programs of study but might be waived for NCSU graduates or graduates from other US ABET accredited schools with good GPAs. Admission is further limited by available room in the elected program of study, and meeting the minimum requirements as given above does not guarantee admission.

Master's Degree Requirements: Thirty-one (31) credit hours; a thesis is optional. Students must have at least 21 hours of ECE courses that cover at least three specialty areas and have at least three credit hours of advanced-level (700-level) ECE courses. Students electing the Option B non-thesis option must meet core course requirements; have ECE courses that cover at least three specialty areas' and have at least three credit hours of 700-level ECE courses.

The Master's degree is offered online through Engineering OnLine. Applications to these MS on-line programs are through the ECE Department and all students must comply with ECE program requirements.

Doctoral Degree Requirements: Approximately 54 credit hours are required beyond the M.S. degree or 72 credit hours beyond the B.S. degree. For those with an NCSU MS degree in our department, no additional courses are required. For those with an NCSU MS degree in another department, 6 credit hours are required in our department. For those with a non NCSU MS degree, 12 credit hours of coursework are required. For those with only a Bachelors degree 30 credit hours of coursework are required. The remaining credit hours are research.

The department wishes to evaluate a Ph.D. student's research potential as quickly as possible. Consequently, all Ph.D. students are required to pass a qualifying review before the end of their third semester of study. This review is based on the student's academic performance to date and the results of a project with one of their committee members. Results are presented to the committee in both written and oral form. Based on this review, the committee will decide if the student may continue in the Ph.D. program.

Student Financial Support: The department offers financial support to qualified students in the form of teaching assistantships, research assistantships, and fellowships. These sources of support generally include coverage of tuition and fees.

Elementary Education

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Elementary Education				Y			Y	

GRADUATE FACULTY

Directors of Graduate Programs:

- J. K. Lee, Box 7801, 919/513-0126, iklee@ncsu.edu, Teacher Education and Learning Sciences
- J. T. DeCuir-Gunby, Box 7801, 919/513-7669, jessica decuir@ncsu.edu, Teacher Education and Learning Sciences

Professors: P. L. Marshall, P. Sztajn; Associate Professors: S. J. Carrier, K. A. Keene, J. Minogue, M. M. Thomson, T. A. Walkowiak, A. M. Wiseman; Assistant Professors: C. C. Lee, J. N. Pearson, J. Wilson; Teaching Associate Professors: V. N. Faulkner, A. D. Harrington; Teaching Assistant Professors: M. J. Jeffries, J. G. Koch

The Elementary Education program in the TELS department offers a Master of Education (M.Ed.) degree in Elementary Education with a concentration in either mathematics or science education. The Master's program prepares teacher leaders who possess strong specialized content knowledge in mathematics or science and a deep understanding of how elementary students learn. The program, designed for those who already hold a current teaching license, is especially tailored to provide candidates with leadership and application skills to transfer their knowledge to their work with elementary school teachers and students.

The program is considered Distance Education (DE) and offered off campus at school sites in the region to take advantage of reduced DE tuition rates.

For more information please see https://ced.ncsu.edu/programs/elementary-education-master/

The coursework for the mathematics and science concentrations are approved by the North Carolina State Board of Education. Therefore, graduates of the M.Ed. program are eligible to receive the elementary mathematics or elementary science specialist add-on to their North Carolina K-6 teaching license from the Department of Public Instruction. The College of Education is accredited by the Council for the Accreditation of Educator Preparation (CAEP).

Admission Requirements:

Elementary Education Master's program: Application requirements include a 500-800 word statement describing professional goals, transcripts and reference letters, and a teaching license. The Graduate School requires a 3.0 GPA in an undergraduate program. The best qualified applicants will be accepted up to the limited number of spaces available for new students.

For the M.S. degree, a minimum of 33 hours is required. The M.S. degree requires a thesis and final oral examination approved by the graduate committee. It is the responsibility of MS students to secure an advisor in advance to supervise their thesis research.

Click on **Graduate Courses** for current course information.

Engineering - (Off-campus program only)

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Engineering						Y		

GRADUATE FACULTY

Director of Graduate Programs:

M. A. Bourham, Box 7909, 919/515-7662, bourham@ncsu.edu, Nuclear Engineering

Named Professors: S. A. Khan, G. N. Parsons; Named Distinguished Professors: C. C. Koch; Named Distinguished University Professors: T. J. Hodgson; Distinguished Professors: J. J. Cuomo, P. D. Franzon, J. Genzer, M. A. Vouk; Distinguished University Professors: M. A. Barlaz; Professors: M. A. Bourham, M. Chow, A. Duel-Hallen, Y. Fathi, R. D. Gould, C. S. Grant, J. M. Nau, H. G. Perros, S. Ranjithan, D. S. Reeves, P. I. Ro, G. Rouskas, R. O. Scattergood, L. M. Silverberg, M. P. Singh, J. K. Townsend, H. J. Trussell, I. Viniotis; Emeritus Named Professors: C. F. Zorowski; Emeritus Professors: T. Johnson, M. L. Leming, C. M. Osburn, C. F. Zorowski; Emeritus Distinguished Professors: D. W. Johnston; Associate Professors: J. W. Eischen, E. F. Gehringer, J. P. Lavelle; Emeritus Associate Professors: T. L. Honeycutt, E. Sanii; Adjunct Assistant Professors: L. D. Krute

The Master of Engineering distance education program serves the needs of students whose schedule or location does not allow for on-campus study, working professionals wishing to obtain an advanced degree, or those who are seeking to change fields within engineering. Students design the plan of study which best meets their career or educational goals.

Admission Requirements: Applicants must have an undergraduate degree in engineering or closely related field with a minimum overall GPA of 3.0. Individuals who do not meet these criteria may need to complete prerequisites before being admitted to the program. GRE scores are not required. International applicants may be required to take the TOEFL or IELTS exam.

Up to 12 hours of credit may be transferred into the program from other universities or non-degree studies, with approval.

Plan of Study: The Master of Engineering is a 30-credit-hour, interdisciplinary program. Students must identify an area of concentration from which they will complete three to six classes. The remaining hours may be taken from any other discipline, or from related departments (Science, Business, etc.) with advisor approval.

Areas of Concentration: Aerospace Engineering

Chemical Engineering
Computer Engineering
Computer Science
Electrical Engineering
Engineering Management
Industrial Engineering
Mechanical Engineering
Materials Science and Engineering
Nuclear Engineering

English

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
English					Y			

GRADUATE FACULTY

Director of Graduate Programs:

J. S. Mulholland, Box 8105, <u>ismulhol@ncsu.edu</u>, English

Named Distinguished University Professors: W. A. Wolfram; Distinguished Professors: A. H. Harrison, J. M. Nfah-Abbenyi; Distinguished University Professors: C. M. Anson; Professors: W. W. Barnhardt, M. P. Carter, M. G. Gordon, J. M. Grimwood, H. D. Kellner, J. J. Kessel, D. L. Laux, L. S. May, W. J. Miller, M. E. Orr, A. M. Penrose, S. M. Setzer, L. R. Severin, A. F. Stein, J. Swarts, E. R. Thomas, J. F. Thompson, J. N. Wall, C. A. Warren; Professors of the Practice: J. C. McCorkle; Emeritus Professors: B. J. Baines, J. Balaban, G. W. Barrax, P. E. Blank, J. W. Clark, A. M. Davis-Gardner, J. D. Durant, C. Gross, L. T. Holley, W. J. Jordan, J. J. Kessel, A. S. Knowles, L. H. MacKethan, W. E. Meyers, C. R. Miller, C. A. Prioli, J. J. Small, L. Smith, J. J. Smoot, M. H. Thuente, R. V. Young; Associate Professors: A. Baker, B. A. Bennett, B. M. Boggs, A. Bolonyai, H. J. Burgess, C. J. Crosbie, H. Ding, R. M. Dodsworth, M. K. Dudley, C. J. Fedukovich, P. C. Fyfe, O. Gelley, S. M. Katz, R. C. Kochersberger, J. I. Mielke, J. D. Morillo, J. S. Mulholland, D. A. Orgeron, J. L. Reaser, D. M. Rieder, T. L. Stinson, R. A. Walsh; Adjunct Associate Professors: S. L. Joffe; Emeritus Associate Professors: D. H. Covington, R. S. Dicks, M. F. King, R. C. Kochersberger, C. E. Moore, D. J. Reavis, H. C. West; Assistant Professors: Z. C. Beare, R. W. Browdy, F. D. Cason, E. C. Corral, A. R. Johnston, J. A. Nolan, S. L. Pigg, M. Simon, D. M. Walls; Teaching Associate Professors: B. Blackley; Teaching Assistant Professors: J. R. Knowles

The Master of Arts program offers four concentrations representing distinctive dimensions of the field of English: Literature, Linguistics, Rhetoric and Composition, and Film Studies. United by a common emphasis on research and critical thinking, the four options offer diverse perspectives and methods for exploring culture and language in myriad forms and circumstances. The degree can serve either as a complete course of study or as the first phase of study toward a doctoral degree at another institution.

Admission Requirements: Overall GPA of 3.0 or higher. Applicants should submit GRE scores (general aptitude and analytical writing; the subject test in English is not required); one official transcript of all undergraduate and graduate work; three letters of recommendation; a statement of purpose; and a writing sample. Students are admitted for either the fall or spring semesters.

Requirements for MA in English: Students select one of four concentrations: Literature, Linguistics, Rhetoric and Composition, or Film Studies. Students choose from a <u>broad array of courses</u> in these disciplinary areas, including an increasing number of boundary-crossing <u>special topics</u> courses. Each concentration requires 33 credit hours, including a 3 credit hour capstone research project in the concluding semester. Course requirements vary by concentration; please see the <u>program website</u> for specific requirements by concentration.

Student Financial Support: <u>Teaching assistantships</u> are available for a limited number of promising students. Applications for assistantships are due February 1 and are only available for those entering in the fall semester.

The English department has a long tradition of academic and literary excellence in all manner of established and cutting-edge fields of inquiry. It also offers a graduate certificate in Digital Humanities. The department is home to editors of several contemporary journals and presses, including Free Verse: A Journal of Contemporary Poetry & Poetics, Hyperrhiz: New Media Cultures. Situated in a university known for its innovative research in engineering and the sciences, the English department's multidisciplinary program offers students the opportunity to do creative and

academic work that engages with issues of technology and its interactions with individuals and institutions.

Click on **Graduate Courses** for current course information.

Entomology and Plant Pathology

Degrees Offered:

Pro	gram Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Ento	mology	Y			Y				

GRADUATE FACULTY

Director of Graduate Programs:

C. E. Sorenson, Box 7613, 919/515-8427, clyde sorenson@ncsu.edu, Entomology and Plant Pathology

Named Professors: R. R. Dunn, B. M. Wiegmann; Named Distinguished Professors: R. L. Brandenburg, F. L. Gould, G. G. Kennedy, R. Roe, C. J. Schal, J. Silverman; Professors: D. Buchwalter, W. G. Buhler, H. J. Burrack, J. R. Meyer, M. J. Scott, C. E. Sorenson, D. R. Tarpy, J. F. Walgenbach, D. W. Watson, A. E. Whitfield; Research Professors: A. C. Cohen; Adjunct Professors: J. J. Arends, Y. J. Cardoza, G. Gordh, N. M. Haddad, N. M. Hamon, D. A. Herbert, A. A. Perez de Leon, D. E. Sonenshine; Emeritus Named Professors: C. S. Apperson, J. W. VanDuyn; Emeritus Professors: J. S. Bacheler, J. R. Baker, J. R. Bradley, W. M. Brooks, W. V. Campbell, L. L. Deitz, M. H. Farrier, F. P. Hain, J. D. Harper, H. B. Moore, H. H. Neunzig, J. F. Roberts, R. L. Robertson, K. A. Sorensen, P. S. Southern, R. E. Stinner, C. G. Wright; Associate Professors: S. D. Frank, M. D. Lorenzen, D. B. Orr, D. D. Reisig, D. Rotenberg; Research Associate Professors: R. M. Jetton; Adjunct Associate Professors: R. C. Hillmann; Assistant Professors: Z. S. Brown, M. H. Reiskind; Adjunct Assistant Professors: K. T. Kreitlow, M. M. Lopez-Uribe, K. A. Suiter; Extension Associate Professors: M. G. Waldvogel

Course offerings or research facilities are available in the following areas: agricultural entomology, apiculture, aquatic entomology, behavior, biological control, chemical ecology, forest entomology, genetic pest management, host-plant resistance, insect ecology, insect transmission of plant pathogens, insect microbe interactions, medical and veterinary entomology, pest management, physiology, molecular biology, population genetics, insect symbiosis, urban ecology, urban entomology, systematics and toxicology.

Admission Requirements: A minimum score of 300 (1000 old score) combined (verbal plus quantitative) is necessary for admission to the M.E. or M.S. program while a score of 306 (1100 old score) is required for the Ph.D. program. Trainingin biology and appropriate courses in chemistry, biochemistry, mathematics and physics, is preferred. A "B" average (3.0 GPA) is required in biology courses and an overall 3.0 GPA during the last two years of the undergraduate program.

Master's Degree Requirements: A minimum of 30 credits are required for graduation 9 credits of letter grade entomology courses plus 2 credits of entomology student seminars are also required. The student's advisory committee will meet with the student to identify an appropriate plan of course work.

Doctoral Degree Requirements: A minimum of 72 credits (18 may be transferred from a Master's degree) are required for graduation. For Ph.D. students 9 credits of letter grade entomology courses plus 3 credits of entomology student seminars are required. The student's advisory committee will meet with the student to identify an appropriate plan of course work.

Student Financial Support: Graduate assistantships and other forms of aid are available to students as described in the Fellowships and Graduate Assistantships section of the Graduate Catalog.

Other Relevant Information: Full admission is permitted only after acceptable applicants have secured an advisor and appropriate financial support. All students are expected to begin their research as soon as possible.

Click on **Graduate Courses** for current course information.

Environmental Assessment

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Environmental Assessment						Y		

GRADUATE FACULTY

Directors of Graduate Programs:

L. R. Taylor, Box 8008, 919/513-3972, <u>lr_taylor@ncsu.edu</u>, Forestry and Environmental Resources T. H. Shear, Box 8008, 919/515-7794, <u>ted_shear@ncsu.edu</u>, Forestry and Environmental Resources

Professors: D. D. Aday, H. V. Daniels, B. Goldfarb, E. G. Nichols, M. N. Peterson, D. Shea; USDI Professors: T. J. Kwak; Associate Professors: G. B. Blank, L. V. Kochtcheeva; Emeritus Associate Professors: S. T. Warren; Extension Professors: M. A. Megalos; Teaching Assistant Professors: W. A. Kallestad, C. E. LePrevost; Lecturers: S. E. Graham, L. R. Taylor

The Master of Environmental Assessment Degree is an interdisciplinary program focused on understanding the adverse impacts that pollutants and naturally occurring substances pose on human health and the environment. The program builds upon NC State University's expertise in environmental issues and problem solving. The program is designed as a completely online degree. This allows professionals the flexibility to complete their degree while still working. In addition, individuals can boost their credentials through our (non degree) certificate program. Through the program, students combine multiple fields of study to tackle complex environmental problems.

Admission Requirements: Admissions to the Master of Environmental Assessment degree is based on the evaluation of several criteria and credentials including educational and professional experience, potential for graduate work, and availability and interest of faculty advisors. Final admission to the degree is granted by the Graduate School upon recommendation of the Environmental Assessment Director of Graduate Programs. See the program website for admissions deadlines. Students are only admitted for fall and spring semesters.

Graduate Record Exam (GRE) results are NOT required for admittance to the program. In general, applicants should hold a B.A. or B.S. degree in a natural resources, environmental science and management, engineering, or related field and have an undergraduate GPA of 3.0 or higher. Experience in environmental management, consulting or regulatory administration will be considered for students with a Bachelors degree in an unrelated field. For those without the necessary background courses in undergraduate science, or mathematics, some additional coursework may need to be completed prior to the start of the graduate student program.

Master's Degree Requirements: The Master of Environmental Assessment Program requires students to complete 30 credit hours of graduate coursework. Twenty-four hours will be in required courses with the remaining six hours selected from the list of elective courses or equivalent.

Once enrolled, each student must submit a plan of work outlining the 30 credit hours which will be included in the students program. Students in the Master of Environmental Assessment program are self-supported. Self-supported students may take up to 9 credit hours of course work per semester. However, students who are employed full time may find it advantageous to enroll in one or two courses per semester.

Other Relevant Information: The Masters of Environmental Assessment requires completion of a professional project. Students will develop a project in his/her area of interest in collaboration with an appropriate organization, agency or business under the direction of their faculty advisor. The Professional Project, is an applied "capstone" experience that is a "paper study" which might include such tasks as assembling existing data and performing a risk assessment. Students will enroll in EA 665 as part of their project research. Upon completion of the research or project work, each

student presents their project (both process and results) in a public departmental seminar and turns in a paper summarizing the relevant research of the professional project.

Click on **Graduate Courses** for current course information.

Fiber and Polymer Science

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Fiber and Polymer Science	Y							
Textile Technology Management	Y							

GRADUATE FACULTY

Director of Graduate Programs:

S. Michielsen, Box 8301, 919/515-1414, Stephen_Michielsen@ncsu.edu, Textile Engineering, Chemistry and Science

Named Professors: R. L. Barker, S. Fang, H. S. Freeman, D. Hinks, S. A. Khan, R. E. King, W. Oxenham, A. E. Tonelli; Named Distinguished Professors: B. Pourdeyhimi; Named Distinguished University Professors: A. B. Godfrey, R. B. Handfield, T. J. Hodgson, B. M. Novak, M. Rappa; Distinguished Professors: J. Genzer, R. J. Spontak; Professors: H. Ade, C. M. Balik, K. R. Beck, C. C. Bozarth, C. L. Bumgardner, T. G. Clapp, A. M. El-Shafei, P. S. Fedkiw, R. E. Fornes, T. K. Ghosh, R. E. Gorga, C. B. Gorman, P. J. Hauser, S. M. Hudson, C. L. Istook, W. J. Jasper, J. A. Joines, M. W. King, T. A. Lamar, K. K. Leonas, T. J. Little, M. G. McCord, S. Michielsen, M. M. Moore, M. Pasquinelli, J. P. Rust, A. M. Seyam, R. Shamey, R. A. Venditti, A. J. Williams, J. R. Wilson, X. Zhang; Adjunct Professors: E. G. Loboa-Polefka, K. Mathur, O. J. Rojas; Emeritus Named Professors: S. K. Batra, S. P. Hersh, H. B. Hopfenberg, C. B. Smith, M. W. Suh, S. C. Winchester, C. F. Zorowski; *Emeritus Professors:* R. A. Barnhardt, R. A. Donaldson, A. H. El-Shiekh, R. E. Fornes, P. L. Grady, B. S. Gupta, D. M. Holthausen, G. N. Mock, H. G. Olf, N. C. Powell, S. T. Purrington, W. C. Stuckey, M. H. Theil, C. Tomasino, C. F. Zorowski; *Emeritus Distinguished* Professors: M. H. Mohamed; Associate Professors: K. E. Annett-Hitchcock, P. Banks-Lee, K. A. Barletta, P. D. Bradford, E. A. DenHartog, H. H. Hergeth, G. L. Hodge, J. S. Jur, R. Kotek, W. E. Krause, J. P. Lavelle, L. A. Lucia, L. Pal, L. L. Parrillo-Chapman, L. F. Rothenberg, S. I. Salmon, Y. Xu; Research Associate Professors: D. P. Griffis; Adjunct Associate Professors: J. P. Casani, G. M. Garland, S. B. Moore; Emeritus Associate Professors: S. N. Chapman, J. K. McCreery, G. W. Smith; Assistant Professors: E. N. Ford, W. Gao, S. Lim, D. R. Matthews, J. A. Porterfield, E. Shim, M. Suh, N. R. Vinueza Benitez, A. J. West, J. F. Woodbridge; Research Assistant Professors: N. Anantharamaiah, G. M. Garland, B. Maze, B. Yeom; *Teaching Professors:* H. Hamouda, H. L. Nuttle; *Lecturers:* G. M. Devine

Fiber and Polymer Science is a multidisciplinary program bringing together the disciplines of mathematics, chemistry and physics and the application of engineering principles for the development of independent scholars versed in all aspects of fiber and polymer materials science. Thus, fiber and polymer science is concerned with the formation of and the mechanical, physical and chemical properties of polymeric materials, fibers produced from them, fiber assemblies in one-, two- and three-dimensional forms, and fiber reinforced composites, as well as the utilization thereof.

Admission Requirements: Students majoring in the physical sciences, engineering, mathematics, textiles and having a Master's degree with at least a 3.15 GPA will normally qualify for admission. For exceptionally qualified students, the Master's degree requirement may be waived, and the student can be admitted directly into the Ph.D. program.

Doctoral Degree Requirements: Credit-hour requirements for the Doctor of Philosophy degree are 72. (Up to 18 hours from an M.S. may be applied against the 72 provided they align well with the FPS program.) Students are admitted to candidacy for the Ph.D. degree after passing a prescribed group of courses, completing a scholarly critique of existing knowledge in the field of specialization, and orally defending a research proposal. They must also demonstrate proficiency in English technical writing.

Student Financial Support: Financial aid in the form of Graduate Research Assistantships, Teaching Assistantships, or other assistantships and fellowships is available to a limited number of students.

COURSE OFFERINGS (Extensive use may be made of graduate course offerings in other colleges on campus when developing the minor field.)

Click on **Graduate Courses** for current Fiber and Polymer Science course information.

OTHER GENERAL COURSES

TC 704 Fiber Formation--Theory and Practice

TC(CH,MSE) 762 Physical Chemistry of High Polymers--Bulk Properties

TC 791 Special Topics in Textile Science

TMS 500 Fiber and Polymer Microscopy

TMS 761 Mechanical and Rheological Properties of Fibrous Material

TMS 762 Physical Properties of Fiber Forming Polymers, Fibers and Fibrous Structures

TMS(MSE) 763 Characterization of Structure of Fiber Forming Polymers

COURSES IN AREAS OF SPECIALIZATION

Polymer Chemistry and Synthesis

TC 530 The Chemistry of Textile Auxiliaries

TC(MSE) 561 Organic Chemistry of Polymers

TC 720 Chemistry of Dyes and Color

TC 721 Dye Synthesis Laboratory

Polymer Physics and Physical Chemistry

TC 704 Fiber Formation--Theory and Practice

TC 705 Theory of Dyeing

TC(CH,MSE) 762 Physical Chemistry of High Polymers--Bulk Properties

TC(CHE) 769 Polymers, Surfactants and Colloidal Materials

TC(CH,MSE) 772 Physical Chemistry of High Polymers--Solution Properties

TC(CHE) 779 Diffusion in Polymers

TC 792 Special Topics in Fiber Science

TMS 500 Fiber and Polymer Microscopy

Mechanics of Textile Materials and Processes

FPS(TT) 781 Mechanics of Twisted Structures

FPS(TT) 782 Mechanics of Fabric Structures

TE 565 Textile Composites

TT 500 Understanding the Textile Complex

TT 503 Materials, Polymers, and Fibers used in Nonwovens

TT 504 Introduction to Nonwovens Processes and Products

TT 505 Advanced Nonwovens Processing

TT 506 Bonding Principles in Nonwovens

TT 507 Nonwoven Characterization Methods

TT 508 Nonwoven Product Development

TT 520 Yarn Processing Dynamics

TT(TE,TMS) 521 Filament Yarn Production Processing and Properties

TT 549 Warp Knit Engineering and Structural Design

TT 550 Production Mechanics and Properties of Woven Fabrics

TT 551 Advance Woven Fabric Design & Structure

TT 552 Formation, Structure and Assembly of Medical Textile Products

TT 570 Textile Digital Design and Technology

TT 571 Professional Practices in Textile Design and Technology

TT 581 Technical Textiles

TT 591 Special Studies in Textile Technology

TT(FPS) 720 Yarn Production Properties: Advanced Topics

Financial Mathematics

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Financial Mathematics						Y		

GRADUATE FACULTY

Directors of Graduate Programs:

S. G. Allen, Box 8114, 919/515-5584, steve_allen@ncsu.edu, Business Management T. Pang, Box 8205, 919/513-2110, tpang@ncsu.edu, Mathematics

Named Professors: D. A. Dickey; Professors: P. L. Fackler, S. K. Ghosh, K. Ito, N. G. Medhin, J. J. Seater, T. Vukina, J. R. Wilson; Emeritus Professors: R. H. Bernhard, P. Bloomfield; Associate Professors: M. J. Kang, T. Pang, D. Pelletier, C. E. Smith; Adjunct Associate Professors: R. W. Ellson; Emeritus Associate Professors: J. S. Scroggs; Adjunct Assistant Professors: J. D. Hauenstein; Teaching Professors: B. L. Puryear; Lecturers: B. L. Puryear

The Departments of Mathematics, Agricultural and Resource Economics, Economics, Industrial and Systems Engineering, and Statistics offer a program leading to the degree of Master of Financial Mathematics. After completing the core requirements, students choose electives to suit their individual needs and interests.

Admissions Requirements: Applicants for admission should have an undergraduate degree that would preferably include courses in advanced calculus, modern algebra, and linear algebra.

Master of Financial Mathematics Requirements: In addition to course requirements (six core courses and four electives), the Master of Financial Mathematics degree requires completion of a three-credit internship or research project.

Student Financial Support: Some funding is available through a limited number of fellowships. Consideration for the support is automatic. There are no teaching assistantships or research assistantships for this Professional Science Masters.

REQUIRED CORE COURSES

ECG 528 Asset Pricing

ISE 711 Capital Investment Economic Analysis

ST 501 Statistical Theory I

MA 547 Financial Mathematics

FIM 548 Monte Carlo Methods for Financial Mathematics

ST 502 Statistical Theory II

ECG 766 Computational Methods in Economics and Finance

GRADUATE COURSES

MBA 521 Advanced Corporate Finance

MBA 522 Portfolio and Capital Market Theory

MBA 524 Equity Valuation

MBA 526 International Finance

MBA 527 Corporate Risk Management

MBA 529 New Firm Financing

ECG 716 Topics in Environmental and Resource Economics

ECG 749 Monetary Aspects Of International Trade

ECG(ST) 751 Econometrics

ECG(ST) 752 Topics in Econometrics

ECG 784 Advanced Macroeconomics

ISE 709 Dynamic Programming

ISE 712 Bayesian Decision Analysis for Engineers and Managers

MA(ST) 747 Probability and Stochastic Processes II

MA(ST) 748 Stochastic Differential Equations

MA 584 Numerical Solution of Partial Differential Equations-Finite Difference Methods

MA 591 Financial Risk Analysis

ST 730 Applied Time Series Analysis

ST 782 Time Series Analysis: Time Domain

ST 783 Time Series Analysis: Frequency Domain

ST 810 Advanced Topics in Statistics

Fisheries, Wildlife, and Conservation Biology

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Fisheries, Wildlife, and Conservation Biology	Y			Y		Y		

GRADUATE FACULTY

Directors of Graduate Programs:

- C. E. Moorman, Box 8008, chris_moorman@ncsu.edu, Forestry and Environmental Resources
- D. D. Aday, Box 7617, derek aday@ncsu.edu, Zoology
- J. F. Levine, Box 8208, 919/513-6397, iflevine@ncsu.edu, Marine, Earth and Atmospheric Sciences
- M. K. Stoskopf, Box 8401, 919/513-6279, michael stoskopf@ncsu.edu, College of Veterinary Medicine
- R. E. Irwin, Box 7617, reirwin@ncsu.edu, Zoology
- T. H. Shear, Box 8008, 919/515-7794, ted_shear@ncsu.edu, Forestry and Environmental Resources

Named Professors: W. G. Cope, R. R. Dunn; Professors: D. D. Aday, R. J. Borski, J. A. Buckel, M. T. Correa, F. W. Cubbage, H. V. Daniels, C. S. DePerno, D. B. Eggleston, J. R. Godwin, K. Gross, C. A. Harms, G. R. Hess, J. M. Hinshaw, C. A. Layman, J. F. Levine, K. M. Meurs, C. E. Moorman, S. C. Nelson, M. N. Peterson, J. A. Rice, R. J. Richardson, A. H. Ross, R. M. Scheller, C. E. Sorenson, M. K. Stoskopf; Research Professors: S. Kennedy-Stoskopf; USDI Professors: J. A. Collazo, T. J. Kwak, T. R. Simons; Adjunct Professors: J. G. Boreman, N. M. Haddad, J. E. Hightower, L. S. Mills, F. S. Scharf; Emeritus Professors: P. T. Bromley, B. J. Copeland, L. A. Degernes, P. D. Doerr, R. A. Lancia, R. L. Noble, K. H. Pollock, R. A. Powell; Associate Professors: M. V. Katti, R. B. Langerhans, T. H. Shear; Research Associate Professors: C. B. Cooper, R. W. Kays; Adjunct Associate Professors: W. G. Dorgeloh, C. A. Harper; Assistant Professors: T. M. Harrison, L. R. Larson, J. K. Pacifici, O. A. Petritz, B. J. Reading, B. W. Taylor; Research Assistant Professors: J. R. Fischer, M. B. Reiskind; Adjunct Assistant Professors: T. R. Black, E. F. Christiansen, D. T. Cobb, K. Delk, M. J. Eaton, R. J. Heise, C. J. Kendall, J. C. Kilgo, R. W. Laney, M. R. Loomis, L. J. Minter, J. A. Morris, A. J. Terando; Teaching Associate Professors: L. B. Pacifici; Lecturers: W. G. Dorgeloh

The degrees are offered through the Fisheries, Wildlife, and Conservation Biology program, an intercollegiate program administered by the Colleges of Natural Resources, Agriculture and Life Sciences, and Veterinary Medicine. Students are affiliated with the department of their major professor. The degrees emphasize habitat assessment, population biology, human dimensions, environmental policy, animal health, and sustainable management of fish and wildlife species.

Admissions Requirements: Application for admission is made directly to the Fisheries, Wildlife, and Conservation Biology program. Minimum requirements include an undergraduate grade point average of 3.0 in an appropriate biological discipline and completion of the Graduate Record Examination (GRE). Admission is competitive and is contingent on the willingness of a member of the faculty to serve as the major professor. Exceptions to minimum requirements may be made for students with special backgrounds.

Master's Degree Requirements: The M.S. degree program requires a minimum of 30 credit hours, including 1-2 hours of seminar and no more than six hours of research. A research-based thesis is required, as is a minor (usually 9-10 hours). The Master of Fisheries, Wildlife, and Conservation Biology degree requires a minimum of 36 credits, including 4-6 hours of special problems and 1-2 hours of seminars, and a professional paper is required. For either degree, further requirements may be imposed by the advisory committee and/or department.

Doctoral Degree Requirements: The Ph.D. program requires 36 to 54 credits of course work beyond the Master's degree, including two seminars and an ethics course, and a dissertation. Exceptionally well-prepared students may petition to have their degree objective changed to Ph.D. before completing the Master's degree.

Student Financial Support: Graduate research and teaching assistantships are offered for qualified students through participating departments. Commitments for assistantships are normally made at the time of admission to graduate study.

Other Relevant Information: Research near campus is facilitated by excellent field, laboratory and computer resources. Off-campus research is conducted at the Pamlico Aquaculture Field Laboratory, research and extension centers in eastern and western NC, The Center for Marine Sciences and Technology in Morehead City, Bull Neck Swamp, Hill Forest, and at facilities of state and federal agencies and private organizations. For additional information, see the Fisheries, Wildlife, and Conservation Biology graduate web page: http://cnr.ncsu.edu/fer/grad/future/.

Click on **Graduate Courses** for current course information.

COURSES FROM ASSOCIATED DEPARTMENTS

BIO 561 Conservation Biology

FW 511 Human Dimension of Wildlife

FW 544 Mammalogy

FW 553 Principles of Wildlife Science

FW 560 International Wildlife Management and Conservation

FW 565 African Ecology and Conservation

FW 602/802 Seminar in Fisheries and Wildlife

FW 720 Epidemiology of Wildlife Diseases

FW 730 Ethics in Fisheries and Wildlife Sciences

FW 801 Issues in Fisheries and Wildlife Sciences Doctoral Seminar

ST 506 Sampling Animal Populations

ZO 501 Ornithology

ZO 542 Herpetology

ZO 726 Quantitative Fisheries Management

Food, Bioprocessing, and Nutrition Sciences

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Food Science	Y			Y		Y		

GRADUATE FACULTY

K. P. Sandeep, Department Head

Director of Graduate Programs:

J. C. Allen, Box 7624, 919/513-2257, jon allen@ncsu.edu, Food, Bioprocessing, and Nutrition Sciences

Named Professors: M. A. Drake, L. Jaykus, S. A. Khan; Named Distinguished Professors: E. A. Foegeding; Distinguished Professors: M. Lila; Professors: J. C. Allen, K. E. Anderson, S. L. Ash, P. A. Curtis, M. G. Ferruzzi, S. A. Hale, H. M. Hassan, S. Kathariou, T. C. Lanier, D. K. Larick, K. P. Sandeep, J. D. Sheppard; Research Professors: J. Simunovic; USDA Professors: F. Breidt, V. D. Truong; Adjunct Professors: P. M. Coronel, C. R. Daubert, J. P. Davis, B. E. Farkas, A. Kilara, R. C. Theuer; Emeritus Professors: L. W. Aurand, H. R. Ball, L. C. Boyd, R. E. Carawan, D. E. Carroll, G. L. Catignani, D. P. Green, M. E. Gregory, A. P. Hansen, V. A. Jones, C. J. Lackey, J. L. Oblinger, D. H. Pilkington, J. E. Rushing, S. J. Schwartz, B. W. Sheldon, L. G. Turner, D. R. Ward; Emeritus Named Distinguished Professors: K. R. Swartzel; Emeritus Named Distinguished University Professors: T. R. Klaenhammer; Emeritus Distinguished Professors: H. E. Swaisgood; Associate Professors: R. Barrangou, B. J. Chapman, P. Cowen, L. S. Goodell, D. J. Hanson, G. K. Harris, C. D. Kay, S. Komarnytsky; USDA Associate Professors: L. L. Dean; Emeritus USDA Professors: H. P. Fleming, R. F. McFeeters, T. H. Sanders, W. M. Walter; Adjunct Associate Professors: R. R. Sharma-Shivappa, O. T. Toomer; Assistant Professors: A. Fogleman, E. Gutierrez Rodriguez, C. D. Stevenson; USDA Assistant Professors: S. D. Johanningsmeier, I. M. Perez Diaz, O. T. Toomer; Adjunct Assistant Professors: A. Amezquita, S. Sang

The department's professional activities include teaching, research, and extension functions. The program provides an educational, research, and informational center in food science for North Carolina and the nation. The department also houses two research centers, the Southeast Dairy Foods Research Center and the Center for Advanced Processing and Packaging Studies. Course offerings and research opportunities are available in the following areas: chemistry-biochemistry, engineering, microbiology, nutrition and processing technology. The strategic directions of the faculty and staff are in the areas of: food safety and foodborne disease prevention; food manufacturing and entrepreneurship; instructional innovation and effectiveness; and, foods for health and well-being.

Admissions Requirements: To be admitted, a student should be a graduate of an accredited program in food science or the equivalent. Graduates of other majors can be admitted but will have additional course requirements. The best qualified applicants will be accepted up to the number of spaces that are available for new students. We only recommend admission to the M.S. or Ph.D. degree if a member of our research faculty is willing to advise the student's research. Applications from qualified candidates will be reviewed by faculty seeking research students; conversely applicants may contact faculty whose research specialty is of interest to inquire about available positions. Admission to the Master of Food Science will be based on the qualifications of the applicants.

Master's Degree Requirements: A Master's program must include courses from at least two of the following categories: chemistry-biochemistry, engineering, microbiology, nutrition and processing technology. The M. S. in Food Science requires 30 credit hours of course work and research. The Master of Food Science requires 36 credit hours of course work, including an independent project and professional skills.

Doctoral Degree Requirements: A doctoral program must include courses from at least three of the categories listed above (or equivalent courses at another university). Total course credits will vary depending on the needs of the student

and the requirements of the Graduate School. All doctoral students are required to pass a departmentally administered written preliminary exam, designed to evaluate a Ph.D. student's general knowledge and comprehension of food science.

Student Financial Support: Graduate assistantships and other forms of student aid available to students in this program are described elsewhere in the Graduate Catalog. Admission does not guarantee availability of financial support.

Other Relevant Information: Students are encouraged to make personal contact with individual faculty whose research program is of interest to them. Information describing each faculty member's program is available at our website (http://ncsu.edu/foodscience).

Click on **Graduate Courses** for current course information.

Foreign Languages and Literatures

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Foreign Languages and Literatures					Y			

GRADUATE FACULTY

R. V. Gross, Department Head

Director of Graduate Programs:

J. C. Michnowicz, Box 8106, michnowicz@ncsu.edu, Foreign Languages and Literatures

Named Professors: G. A. Dawes; Professors: T. P. Feeny, M. D. Garval, R. V. Gross, H. A. Jaimes, D. M. Marchi, J. Mari, J. A. Pasten, E. Tai; Emeritus Professors: J. R. Kelly, Y. B. Rollins, M. A. Witt; Associate Professors: V. Bilenkin, H. G. Braunbeck, M. A. Darhower, S. Despain, S. E. Garrigan, N. K. Isaacson, J. P. Mertz, J. C. Michnowicz, S. S. Mody, L. A. Mykyta, V. A. Wust; Emeritus Associate Professors: R. A. Alder, S. T. Alonso, M. M. Magill, M. L. Salstad; Assistant Professors: M. R. Eley, R. E. Ronquest; Teaching Associate Professors: G. L. Mathews; Teaching Assistant Professors: K. Tharrington

The Master's degree in Foreign Languages and Literature offers concentrations in both French Language and Literature and Spanish Language and Literature.

Admission Requirements:

- A baccalaureate degree from an accredited college or university
- Undergraduate GPA of 3.0 or above
- Narrative statement of professional and personal objectives (in English, 300 words).
- Language proficiency as determined by a writing sample and a speaking sample in the target language (French or Spanish). Follow the specific sample guidelines at https://fll.chass.ncsu.edu/graduate/application_information.php#Sample
- Some applicants may be given provisional admittance. Students admitted provisionally must complete at least 9 hours of 500-level courses in the target language, earning grades of B or higher in order to receive full graduate standing.
- Visit the program's web site (http://fll.chass.ncsu.edu/graduate) for complete admissions information.

Degree Requirements: The program requires at least 30 hours of course work and a culminating project. Each student's program is tailored to enhance his or her career objectives. Students who plan to pursue a Ph.D. or teach in a community college or university receive the requisite training and assistance. K-12 teachers who already have "Initial" or "A" licensure may earn "M" licensure by taking 30 hours in specified disciplines and completing an Action Research Project as their culminating project. K-12 teachers who already hold "A" licensure can add-on English as a Second Language (ESL) licensure by taking 36 hours in specified disciplines. Visit the program web site for complete departmental course requirement information (https://fll.chass.ncsu.edu/graduate/plans_of_study.php).

Student Financial Support: Graduate assistantships are available to students in both the French and Spanish concentrations and are awarded by open competition and based on the strength of the admissions application.

Other Relevant Information: Students are admitted for the fall semester only. February 1 is the application deadline for students interested in receiving full consideration for a teaching assistantship. (Interest is indicated on the Graduate School Admissions application.) February 15 is the deadline for international students and May 1 for domestic students.

Click on Graduate Courses - General for current course information.

Click on **Graduate Courses - French** for current course information.

Click on **Graduate Courses - Spanish** for current course information.

Forest Biomaterials

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Forest Biomaterials	Y			Y		Y		

GRADUATE FACULTY

M. J. Hakovirta, Department Head

Director of Graduate Programs:

J. J. Pawlak, Box 8005, 919/513-0511, <u>jipawlak@ncsu.edu</u>, Forest Biomaterials

Named Professors: A. M. Grunden, M. A. Hubbe, H. Jameel, S. A. Khan; Named Distinguished Professors: V. C. Chiang; Professors: D. S. Argyropoulos, M. J. Hakovirta, S. S. Kelley, A. G. Kirkman, E. O. Sills, D. C. Tilotta, R. A. Venditti; Adjunct Professors: R. B. Phillips, O. J. Rojas; Emeritus Professors: H. Chang, E. B. Cowling, E. L. Deal, E. L. Ellwood, I. S. Goldstein, J. A. Heitmann, L. G. Jahn, M. J. Kocurek, H. G. Olf, R. G. Pearson, R. J. Thomas, E. A. Wheeler; Associate Professors: L. A. Lucia, P. H. Mitchell, L. Pal, S. Park, J. J. Pawlak, P. N. Peralta, I. M. Peszlen, D. E. Saloni; Research Associate Professors: R. W. Kays; Associate Professors of the Practice: S. Dasmohapatra; Adjunct Associate Professors: E. A. Capanema, P. W. Hart; Assistant Professors: R. W. Gonzalez, Y. Yao; Adjunct Assistant Professors: A. Ayoub; Teaching Professors: S. D. Jackson; Teaching Associate Professors: M. V. Byrd

Course offerings and research facilities are available in the following areas: wood chemistry, biopolymer chemistry, biomaterials, bio-energy, pulping chemistry, process analysis, polymer chemistry, paper physics, paper recycling, wood physics (especially wood liquid relations), wood anatomy, wood biology, wood mechanics and engineering, wood machining, manufacturing processes, wood-based industry economics and marketing, and forest-based life cycle analysis.

Admission Requirements: Requirements listed here are in addition to graduate school requirements stated elsewhere. To be admitted, a student should have earned a B.S. degree with a major in wood and paper science or another suitable science or engineering degree. Students with a 3.0 GPA and with appropriate course backgrounds will be considered for admission. The GRE test scores are required except for the Master of Forest Biomaterials offered through Distance Education.

Master of Science Degree Requirements: The M.S. degree requires a minimum of 30 credit hours. In addition, there are WPS core course requirements, which vary depending on the field of study. Six hours of research (WPS 695) must be taken. Two hours of Seminar (WPS 591) must be passed. A qualifying exam must be passed.

Master of Forest Biomaterials Degree Requirements: The Master of Forest Biomaterials is a non-thesis, professional degree for students not interested in a thesis-based research program. The Master of Forest Biomaterials degree is offered both on campus and through Distance Education. For the on-campus program a minimum of 36 course credits is required. The regulations regarding credits are the same as for the M.S. degree except that no credit for WPS 695 is required or given and up to six credits of 400-level courses in the major field may be included. A technical report, which demonstrates the student's ability to gather, analyze and report information is required.

In addition to Graduate School requirements, the Distance Education program requires that the student be employed professionally in a wood or paper science or allied field, have one year of professional experience, and take required WPS core courses, which vary depending on the field of study. A minimum of 30 course credits is required of students who have relevant professional experience, including one hour of Seminar (WPS 591) and five hours of an independent project (WPS 625). For distance students without relevant professional experience, 36 hours is required.

Doctoral Degree Requirements: In addition to Graduate School requirements, Ph.D. candidates must present two departmental seminars (WPS 791) before their final oral examination. Candidates must also write and defend a research proposal on their intended research (first proposition) and a research proposal on an area outside of their dissertation/thesis research (termed a second proposition) and pass qualifying exams.

Student Financial Support: A number of research assistantships and fellowships are available.

Other Relevant Information: Graduate students should select a committee chair and other advisory committee members and submit a plan of graduate work by the end of their first semester of residence. They are also required to take the qualifying examination as part of a Research Methods course. These examinations are to ensure that the student has the basic abilities to think independently as a scientist within the context of the forest biomaterials literature. The department believes M.S. and Ph.D. students should select a research topic and begin their dissertation or thesis research as early as possible.

As the field of forest biomaterials is a derived science, students are urged to develop a strong secondary area of excellence in one or more of the supporting disciplines such as organic chemistry, polymer chemistry, chemical engineering, mathematics, statistics, biology, engineering mechanics, mechanical engineering, physics, and economics or business administration.

Click on **Graduate Courses** for current course information.

Forestry and Environmental Resources

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Forestry and Environmental Resources	Y			Y		Y		

GRADUATE FACULTY

S. T. Gower, *Department Head*

Director of Graduate Programs:

T. H. Shear, Box 8008, 919/515-7794, ted shear@ncsu.edu, Forestry and Environmental Resources

Named Professors: R. C. Abt; Named Distinguished Professors: V. C. Chiang; Professors: V. P. Aneja, R. E. Bardon, R. R. Braham, F. W. Cubbage, C. S. DePerno, J. Frampton, D. J. Frederick, B. Goldfarb, S. T. Gower, G. R. Hess, G. R. Hodge, F. Isik, J. B. Jett, S. Khorram, J. S. King, Y. Leung, B. Li, S. E. McKeand, R. K. Meentemeyer, C. E. Moorman, S. C. Nelson, E. G. Nichols, D. L. Osmond, M. N. Peterson, J. P. Roise, R. M. Scheller, E. O. Sills, M. Watzin, R. W. Whetten; Research Professors: M. D. Lowman; USDA Professors: F. E. Bridgwater, J. B. Holland, S. G. McNulty, G. Sun; USDI Professors: T. R. Simons; Adjunct Professors: K. L. Abt, H. E. Burkhart, C. H. Greenberg, T. P. Holmes, J. P. McTague, D. E. Mercer, L. S. Mills, U. J. Nilsson, M. Olsson, J. P. Prestemon, R. C. Purnell, K. H. Riitters, T. A. Steelman, C. Trettin, J. M. Vose, D. N. Wear; *Emeritus Professors:* H. L. Allen, A. W. Cooper, E. B. Cowling, H. A. Devine, P. D. Doerr, W. S. Dvorak, E. C. Franklin, J. D. Gregory, F. P. Hain, A. E. Hassan, L. E. Hinesley, J. B. Jett, R. C. Kellison, R. A. Lancia, L. A. Nielsen, E. A. Wheeler; *Emeritus Distinguished Professors:* S. W. Buol, R. R. Sederoff; Associate Professors: G. B. Blank, J. A. Delborne, R. E. Emanuel, D. W. Hazel, M. V. Katti, D. B. Morais, E. L. Seekamp, T. H. Shear; *Research Associate Professors:* C. B. Cooper, R. M. Jetton, R. W. Kays, K. M. Potter; Adjunct Associate Professors: D. M. Amatya, P. J. Donoso, W. G. Dorgeloh, A. L. James, F. H. Koch Jr, M. Lstiburek, R. A. Rubilar, S. J. Van Bloem; *Emeritus Associate Professors*: H. V. Amerson, S. T. Warren; *Assistant Professors*: M. L. Ardon Sayao, R. L. Cook, J. A. Forrester, J. M. Gray, Z. H. Leggett, K. Martin, J. K. Pacifici, R. Parajuli, L. Rivers, J. P. Wang; Research Assistant Professors: J. J. Acosta, J. K. Costanza, P. Nepal; Adjunct Assistant Professors: P. V. Caldwell, J. W. Coulston, W. P. Cumbie, G. E. Frey, E. F. Hain, J. S. Iiames, K. A. Mcginley, M. C. Moorman, C. Serenari, J. W. Smith, Y. Takeuchi; Extension Professors: M. A. Megalos; Teaching Associate Professors: J. B. McCarter, L. B. Pacifici; Teaching Assistant Professors: E. S. Money; Lecturers: W. G. Dorgeloh

The department offers training in all of the major sub-disciplines of forest, natural resources, and environmental-related science and management. Considerable flexibility is allowed in developing graduate programs tailored to the student's objectives.

Admission Requirements: All parts of the application, including the GRE general test, are considered in making decisions. Admission is competitive and depends on the willingness of at least one member of the faculty to serve as major professor. An undergraduate degree in forestry is not required.

Master's Degree Requirements: The Master of Forestry is now accredited by the Society of American Foresters. It requires 40 credits, with a 1 credit project. The Master of Science course work requirements range from 30 to 36 credits. Students without an appropriate background will require additional preparatory work. For the M.S. degree, a minor is required.

Doctoral Degree Requirements: As a rule, students must complete a master's degree before entering the Ph.D. program. However, exceptionally well-prepared students may petition to have their degree objective changed to Ph.D. before completing the master's degree. In addition to the dissertation, Ph.D. programs require 36 to 54 credits of course work beyond the master's degree. A minor is required.

Student Financial Support: Stipend levels allow students to graduate without incurring significant debt. Those who begin without an assistantship are considered for funding as projects become available. Additional funding is available through a limited number of teaching assistantships.

Other Relevant Information: MS and PhD graduate students must meet the following requirements: (1) take a one-credit research methodology course, FOR 603 or 803, early in his/her program; (2) take a seminar course (typically FOR 601/801), and (3) begin the final oral exam with a seminar to the department based on work accomplished during the graduate program.

Click on **Graduate Courses** for current course information.

Genetics

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
<u>Genetics</u>	Y			Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

R. B. Roberts, Box 7614, <u>reade_roberts@ncsu.edu</u>, Biological Sciences

Named Professors: J. M. Alonso, R. E. Dewey, J. B. Ristaino, B. M. Wiegmann; Named Distinguished Professors: R. R. Anholt, V. C. Chiang, R. A. Dean, F. L. Gould, L. K. Hanley-Bowdoin, C. J. Schal, Z. Zeng; *Named Distinguished* University Professors: T. F. MacKay; Distinguished University Professors: M. M. Goodman, W. F. Thompson; Professors: M. Breen, I. Carbone, R. G. Franks, J. R. Godwin, C. H. Haigler, F. Isik, R. S. Lewis, H. Liu, J. W. Mahaffey, K. M. Meurs, S. V. Muse, N. J. Olby, M. J. Scott, S. M. Sullivant, J. L. Thorne, J. Tzeng, K. R. Weninger, Q. Xiang; USDA Professors: J. B. Holland; Adjunct Professors: R. E. Cannon, E. A. Stone, D. W. Threadgill; Emeritus Named Professors: W. F. Boss, E. Eisen; Emeritus Professors: S. E. Curtis, W. E. Kloos, D. F. Matzinger, W. H. McKenzie, J. G. Scandalios, H. E. Schaffer; *Emeritus Named Distinguished Professors:* W. R. Atchley, C. S. Levings, E. A. Wernsman; Emeritus Named Distinguished University Professors: T. R. Klaenhammer; Emeritus Distinguished Professors: R. R. Sederoff; Associate Professors: R. Barrangou, C. Beisel, G. C. Conant, T. Ghashghaei, S. Heber, V. Kuraparthy, R. B. Langerhans, T. A. Long, M. D. Lorenzen, C. Maltecca, S. R. Milla-Lewis, A. A. Motsinger-Reif, D. M. Nielsen, X. Peng, M. Pierce, D. M. Reif, M. L. Sikes, J. A. Yoder; Research Associate Professors: P. A. Estes; USDA Associate Professors: P. J. Balint-Kurti; Emeritus USDA Professors: C. W. Stuber; Adjunct Associate Professors: W. O. McMillan, N. Singh; Assistant Professors: H. Ashrafi, D. L. Aylor, M. A. Cowley, J. R. Elfenbein, R. Ke, A. J. Keung, C. Laplante, K. Marsden, L. A. McGraw, S. K. Mishra, F. M. Mowat, C. C. Nestor, A. J. Planchart, G. T. Reeves, M. H. Reiskind, R. B. Roberts, A. San Miguel Delgadillo, R. Sozzani, A. N. Stepanova, C. M. Theriot; Research Assistant Professors: M. A. Carbone, M. B. Reiskind, Y. Zhou; USDA Assistant Professors: A. M. Hulse-Kemp; Adjunct Assistant Professors: R. E. Cannon; Teaching Professors: M. B. Gardner; Teaching Assistant Professors: C. L. Gordy, C. J. Halweg, W. M. Jones, J. Little

The Genetics Graduate Program is a University wide program. Current faculty are in 14 Departments and four Colleges. The Genetics Program provides a well-balanced program of graduate course work and research training. The faculty conducts basic research in all areas of genetics, including molecular, cellular and developmental genetics; behavioral genetics, biomedical genetics, evolutionary, population and quantitative genetics, statistical genetics, and bioinformatics. Faculty research utilizes both traditional model organisms (fruit flies, mice and Arabidopsis) and non-traditional systems (cats, cockroaches, dairy cattle, dogs, maize, pigs, pine trees and more). Interdisciplinary research is encouraged.

Admission Requirements: Applicants may come from a number of undergraduate programs that include biological, agricultural, physical and mathematical science training. All applications are screened by an admissions committee, and the best qualified applicants will be accepted up to the number of spaces that are available for new students. The program uses the requirements set by the Graduate School to evaluate applications (GRE, unofficial transcripts from each previously attended college or university, three letters of recommendation, personal statement, and proof of English proficiency for non-US citizens). Competitive applicants will have strong percentile scores in all categories and have scored above the 85th percentile in the Quantitative portion of the exam. Competitive applicants will also include research and other relevant experience as well as their interest and fit for the program in their personal statement.

Master's Degree Requirements: The M.S. degree requires a minimum of 30 credit hours, of which 14 hours are core course requirements, three hours are additional elective graduate courses with substantial genetics content, and three hours are other elective graduate courses. M.S. students majoring in Genetics are required to complete dissertation

research with three credit hours of Master's Supervised Research, six credits of Master's Thesis Research, one credit of Master's Thesis Prep, and one credit of Master's Examination. M.S. students are also required to teach one semester of undergraduate courses and may enroll in three credits of Master's Supervised Teaching. 12 hours of required courses are required for Genetics minors. The Master's of Genetics requires a minimum of 31 credit hours, of which 17 hours are core course requirements, six hours are additional elective genetics courses and eight hours are elective graduate courses.

Doctoral Degree Requirements: A total of 18 hours of seven core courses and 12 hours of elective graduate courses, nine of which have substantial genetics content, is required of all majors. Ph.D. students majoring in Genetics are required to complete dissertation research with three credit hours of Doctoral Supervised Research and a combination of Doctoral Dissertation Research, Doctoral Preliminary Examination, and Doctoral Dissertation Prep to total 39 hours. Students are also required to and teach two semesters of undergraduate courses and may enroll in six credits of Doctoral Supervised Teaching to be used toward the remaining 39 credit hours. 12 hours of required courses are required for Genetics minors.

Student Financial Support: Genetics graduate students are supported on Research and Teaching Assistantships (RAs and TAs). Specific pay varies depending on the assistantship, and students are paid bi-weekly. More information will be provided at the time of acceptance into the program.

Other Relevant Information: All M. S. and Ph. D. students rotate through three laboratories during their first semester. At the end of the semester, they choose a laboratory for their research activities consistent with their interests and available research projects. Provisions are available for a co-major and collaborative research in more than one laboratory.

Click on **Graduate Courses** for current course information.

Genomic Sciences

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Bioinformatics	Y					Y		
Functional Genomics	Y			Y		Y		

GRADUATE FACULTY

Directors of Graduate Programs:

D. M. Bird, Box 7253, 919/515-1967, <u>david_bird@ncsu.edu</u>, Entomology and Plant Pathology S. V. Muse, Box 7566, 919/515-1948, <u>muse@ncsu.edu</u>, Statistics

Named Professors: J. M. Alonso, D. M. Bird, M. Davidian, R. E. Dewey, A. M. Grunden, R. M. Kelly, J. B. Ristaino, A. A. Tsiatis, B. M. Wiegmann, G. C. Yencho; *Named Distinguished Professors*: R. R. Anholt, R. S. Boston, V. C. Chiang, M. E. Daub, R. A. Dean, J. Doyle, L. K. Hanley-Bowdoin, S. Lommel, J. Odle, Z. Zeng; *Named Distinguished* University Professors: T. F. MacKay; Distinguished Professors: M. A. Vouk; Distinguished University Professors: D. L. Bitzer, M. M. Goodman, W. F. Thompson; *Professors:* K. B. Adler, P. Arasu, C. M. Ashwell, R. J. Borski, M. Breen, E. B. Breitschwerdt, D. T. Brown, J. W. Brown, I. Carbone, G. A. Dean, C. E. Farin, R. G. Franks, F. J. Fuller, J. E. Gadsby, S. K. Ghosh, J. R. Godwin, B. Goldfarb, J. M. Haugh, C. L. Hemenway, J. M. Horowitz, J. M. Hughes-Oliver, E. L. Kaltofen, S. Kathariou, J. A. Knopp, B. Li, H. Liu, J. W. Mahaffey, E. S. Maxwell, S. E. McKeand, M. S. Merrill, E. S. Miller, P. E. Mozdziak, D. C. Muddiman, S. V. Muse, C. H. Opperman, J. N. Petitte, R. M. Petters, J. A. Piedrahita, M. C. Sagui, H. A. Sederoff, B. Sherry, R. C. Smart, S. M. Sullivant, J. L. Thorne, J. Tzeng, R. W. Whetten, P. L. Wollenzien, F. A. Wright, Q. Xiang, D. Xie, D. Zhang; Research Professors: J. Cavanagh; USDA Professors: J. B. Holland; Adjunct Professors: J. Cavanagh, J. L. Gibson, E. A. Koutsos, M. S. McGinnis, E. A. Stone, R. D. Wolfinger; *Emeritus Named Professors:* W. F. Boss, E. Eisen; *Emeritus Professors:* S. D. Clouse, S. E. Curtis, D. H. Ley, J. W. Moyer, P. E. Orndorff, W. Tompkins; *Emeritus Named Distinguished Professors*: W. R. Atchley, G. A. Payne; Emeritus Named Distinguished University Professors: T. R. Klaenhammer; Emeritus Distinguished Professors: R. R. Sederoff; Associate Professors: R. Barrangou, J. M. Bruno-Barcena, G. C. Conant, M. B. Goshe, S. Heber, C. Hoyo, M. D. Koci, S. Komarnytsky, D. S. Lalush, X. Li, T. A. Long, A. Maity, C. Maltecca, F. Meilleur, A. A. Motsinger-Reif, N. M. Nascone-Yoder, D. M. Nielsen, J. W. Olson, X. Peng, M. Pierce, B. J. Reich, D. M. Reif, M. Rodriguez-Puebla, M. L. Sikes, C. E. Smith, L. J. Unruh Snyder, J. A. Yoder; *Research Associate Professors:* P. A. Estes; Adjunct Associate Professors: L. Li, W. O. McMillan, N. Singh; Emeritus Associate Professors: H. V. Amerson; Assistant Professors: H. Ashrafi, D. L. Aylor, C. J. Doherty, D. Fourches, T. Hsieh, M. Iorizzo, C. C. Nestor, B. J. Reading, R. Sozzani, A. N. Stepanova; Research Assistant Professors: Y. Zhou; USDA Assistant Professors: A. M. Hulse-Kemp, I. M. Perez Diaz; Adjunct Assistant Professors: J. L. Stephenson; Teaching Associate Professors: J. L. Lubischer; *Teaching Assistant Professors:* A. Y. Scales

Genomic sciences has two components. Functional genomics, the generation of large bodies of data relating to organism function, encompasses gene discovery, gene expression, protein and nucleic acid structure and function, gene and gene product interactions, and genomic approaches to breeding and comparative studies relevant to ecology and evolutionary biology. Bioinformatics is the analysis of these vast and complex data sets including methods to analyze extremely large sets of genomic information such as DNA sequences and expression from DNA microarrays. Students register in either of these two fields but also receive a solid grounding in the other through core courses common to both programs. Unique and exceptional resources include the <u>Bioinformatics Research Center</u> and the <u>Genome Research Laboratory</u>.

Admission Requirements: Students should have an undergraduate major in the biological or physical sciences, mathematics, statistics or computer science and have completed calculus and other comparable courses. In addition to the other application requirements, a student should submit a statement of interests and career goals.

Master's Degree Requirements: Students take a 15-credit core curriculum of courses common to both programs followed by courses specific to the degree and discipline. The Master's of Bioinformatics requires a minimum of 33 credit hours. The Master's of Functional Genomics requires a minimum of 30 credit hours, and the Master's of Science in Functional Genomics requires a minimum of 36 credit hours.

Doctoral Degree Requirements: The Ph.D. program requires a total of 72 credits, and all students participate in a journal club, monthly seminar series and research ethics training. A co-mentoring system exists between bioinformatics and functional genomics through which each student has advisors from both disciplines. Throughout the program they will have the opportunity to gain practical experience in the Genome Research Laboratory, Bioinformatics Research Center and DNA Sequencing Facility.

Student Financial Support: A significant number of fellowships are available through the genomics program, and students may also be supported by research grant funds awarded to genomics faculty members.

GRADUATE COURSES

Many courses are available and cross-listed through 25 participating departments in the Colleges of Agriculture & Life Sciences, Engineering, Natural Resources, Physical & Mathematical Sciences, and Veterinary Medicine.

Geospatial Analytics

Degrees Offered:

	Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA	
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GRADUATE FACULTY

The PhD in Geospatial Analytics is an integrative program bringing together the Center for Geospatial Analytics (CGA) with departments from across NC State to produce a new generation of interdisciplinary data scientists skilled in developing novel understanding of spatial phenomena. The program connects students with mentors and peers across multiple disciplines and provides scientific and professional knowledge through practicing geospatial analytics in academia, industry, and government agencies. The program consists of (1) multidisciplinary advising, (2) an intense core curriculum that covers advanced theory in the geospatial sciences along with specialized training in the quantitative, algorithmic, and systems aspect of geospatial computing, information technology, applications, and analytics, in combination with domain research and coursework, (3) an internship experience, and (4) a complete dissertation that advances the field of geospatial science, GIS, and geospatial analytics.

Click on **Graduate Courses** for current course information.

Geospatial Information Science and Technology

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Geospatial Information Science and Technology						Y		

GRADUATE FACULTY

Director of Graduate Programs:

E. S. Money, Box 7106, esmoney@ncsu.edu, Ctr. for Geospatial Analytics

Professors: E. H. Bressler, D. A. Crouse, G. D. Garson, C. G. Healey, R. W. Heiniger, G. R. Hess, S. Khorram, H. Krim, D. K. Larick, Y. Leung, J. F. Levine, R. K. Meentemeyer, H. Mitasova, S. C. Nelson, M. F. Overton, W. J. Rasdorf, A. R. Rice, R. A. St. Amant, H. J. Trussell, S. E. Yuter; USDI Professors: T. J. Kwak; Emeritus Professors: H. A. Devine; Associate Professors: D. R. Bohnenstiehl, G. T. Roberson, W. R. Smith, R. R. Vatsavai, K. W. Wegmann, J. G. White, S. B. Wiley; Research Associate Professors: P. K. Baran, R. W. Kays; Adjunct Associate Professors: F. H. Koch Jr; Emeritus Associate Professors: M. L. Vasu; Assistant Professors: J. M. Gray, J. Vukomanovic; Adjunct Assistant Professors: J. W. Coulston, E. F. Hain, E. L. Hestir, M. R. Loomis, J. W. Smith; Teaching Associate Professors: J. B. McCarter; Teaching Assistant Professors: E. S. Money, S. K. Supak, L. G. Tateosian

The Master of Geospatial Information Science and Technology (MGIST) equips students with the necessary knowledge and tools to become high-end geospatial professionals using a unique curriculum that leverages NC State's strengths in computational and data sciences, information technology, and interdisciplinary training in combination with professional skills development in areas of project management, technical writing, and communications. The MGIST can be completed entirely online, allowing flexibility for both students just entering the work force and working professionals.

Through a combination of geospatial theory, hands-on applications, and client-based service-learning experiences, students graduate from the program with a solid foundation to provide a wide range of geospatial expertise for local, state, national, and international organizations.

Admissions Requirements: Admission to the program requires an undergraduate GPA of 3.0 or better, a professional resume, a personal statement describing the applicant's professional ambitions and experience, and 3 letters of reference. Students with less than a 3.0 undergraduate GPA may be considered for provisional admission into the MGIST or referred to the GIS Certificate program to enhance skills and prepare for reapplication to the MGIST.

Master's Degree Requirements: The MGIST degree requires 33 course credit hours including a 3-credit-hour Capstone course and development of a professional portfolio highlighting geospatial analytic skills and competencies. A cumulative GPA of 3.0 or better is required in order to graduate. Specific course requirements are listed on the MGIST web site.

Student Financial Support: Students in this program are eligible for financial aid and may compete for program assistantships and internships.

Other Relevant Information: The GIS program also offers a <u>Graduate Certificate in GIS</u> (12 credit hours). Certificate students may transfer up to 12 credits into the MGIST degree. Students enrolled in other NC State graduate programs may enroll in the Certificate program or in either of the two related minors (<u>GIS</u> or <u>Environmental Remote Sensing</u>).

Graphic Design

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Graphic Design						Y		

GRADUATE FACULTY

T. Liu, **Department Head**

Director of Graduate Programs:

D. Gonzales Crisp, Box 7701, 919/515-8361, denise crisp@ncsu.edu, Graphic and Industrial Design

Professors: D. Gonzales Crisp, H. Holljes, T. Liu; *Emeritus Professors:* M. J. Davis, A. S. Lowrey; *Associate Professors:* H. S. Armstrong, K. L. Bailey, R. A. Flinchum, C. Gill, S. Townsend; *Assistant Professors:* D. A. Ham, D. K. Littlejohn, M. O. Peterson, K. A. Umstead

Today's design problems are complex, require systems-oriented thinking, and call for new problem-solving paradigms. The contemporary culture is participatory, arguing for greater user influence and the design of tools and systems through which people create their own experiences. Rapid technological evolution challenges the traditional "almost perfect" goal of design, accepting that design will arise from an organic approach to problem solving, not a mechanistic one. And designers are increasingly accountable for anticipating the outcomes of design decisions with real people and need research skills to forecast changes in the surrounding context.

Studios and seminars in the Master of Graphic Design program explore the implications of thinking about user experience and research from these perspectives. Student work invites dialogue through the propositional artifacts and systems that students design.

At the same time, the Master of Graphic Design is not a fine arts program. Student work must convince thought leaders that new ideas about communication can live in the world of professional design practice and add value to people's lives. To make that argument, it must be informed by deep understanding of people, activities, and settings and its effects must be nested within larger physical, cultural, social, and technological systems. The program acquaints students with methods for studying these things and for describing them to audiences outside of design. The program has the broad objective to educate socially responsible, intellectually curious, historically aware, and technologically adept communication design professionals.

Admissions Requirements: Applications for Priority Admission are due to the Department of Graphic Design and Industrial Design by January 5. Applications are reviewed until all seats are filled. In addition to Graduate School requirements, the Department asks for department personal data forms, a written statement of intent, and a website or accessible online PDF portfolio—designed specifically for application to the program—that demonstrates experience and skills in visual communication.

MGD II Track: Applicants whose first degree is a BFA (or BGD) in graphic design should apply to the MGD II program. The applicant ideally will have worked in professional practice for at least one year, however recent BFA graduates will be considered.

MGD III Track: Applicants whose first degree is not in graphic design but who have some graphic design experience should apply to the MGD III program. Applicants who have earned a BA or BS (rather than a BFA) in visual art or design will be considered for the MGD III program. This initial year in advanced graphic design practices prepares candidates for the MGD II curriculum, and therefore the portfolio submitted should demonstrate sufficient experience to undertake upper-level undergraduate coursework and preparatory graduate work. In the statement of intent, applicants

should describe a research connection between the first discipline and the intended graduate graphic design study. MGD III applicants are required to supply GRE scores.

Master's Degree (MGD II) Requirements: The Master of Graphic Design degree requires a minimum of 48 credit hours. The program does not accept transfer credits in lieu of required coursework at NC State.

Student Financial Support: The department has limited provisions for tuition remission and assistantships. Assistantships are awarded on the basis of student and departmental needs, student GPA, and pertinent work experience. Assistantship requests should be made to the Department Head of Graphic Design and Industrial Design, and should be submitted with the application for admission (for incoming students) or by advertised deadline (for continuing students).

Click on **Graduate Courses** for current course information.

History

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
History					Y			
Public History	Y				Y			

GRADUATE FACULTY

D. A. Zonderman, Department Head

Directors of Graduate Programs:

- B. S. Sirota, Box 8108, 773/484-9418, bssirota@ncsu.edu, History
- T. S. Gordon, Box 8108, tsgordo2@ncsu.edu, History

Named Professors: D. P. Gilmartin; Distinguished University Professors: W. Adler; Professors: R. K. Bassett, C. T. Friend, O. J. Kalinga, A. F. Khater, M. G. Kim, K. P. Luria, A. W. Mitchell, S. T. Parker, J. E. Rudolph, R. W. Slatta, K. S. Vincent, D. A. Zonderman; Emeritus Professors: J. E. Crisp, M. S. Downs, J. M. Riddle, S. L. Spencer, K. P. Vickery; Associate Professors: D. R. Ambaras, M. M. Booker, T. S. Gordon, B. M. Kelley, W. C. Kimler, S. M. Lee, J. L. Mell, K. Mellen Charron, B. S. Sirota, N. B. Strote; Emeritus Associate Professors: G. Surh; Assistant Professors: M. L. Cherry, F. Freitas, E. P. Jones, V. I. Kasper-Marienberg, J. Kertesz, A. E. McGill, T. S. Paulette; Adjunct Assistant Professors: J. W. Caddell; Teaching Associate Professors: S. B. Freitag, N. A. Robins; Teaching Assistant Professors: J. C. Boyles, H. C. Perros

Admission Requirements: Admission to the M.A. in History and Public History and Ph.D. in Public History programs require: a bachelor's degree from an accredited college or university; transcripts; scores from the Graduate Record Exam (GRE); personal statement, listing career goals, historical interests, and potential advisor; letters of recommendation; and a writing sample of approximately ten pages. See the program's website (http://history.chass.ncsu.edu/grad/apply.php) for additional details.

Master's Degree Requirements: Master of Arts Degree in History: This program requires a total of 30 credit hours, including 6 hours in core courses, 12 credit hours in a major field, 6 credit hours in a minor field, and 6 credit hours in thesis work. Each student's program is tailored to enhance his or her career objectives. Social studies teachers, for example, may earn advanced competency on completion of the M.A. in history with additional course work in education. Similarly, students who plan to pursue a Ph.D. degree receive the requisite training and assistance. Master of Arts Degree in Public History: This program requires 36 credit hours of course work. Students may take a non-thesis or thesis option. Half the hours fall in historical studies, the rest in applied history classes, including innovative courses in museum studies and heritage studies. Students perform internships in their own special areas of interest.

Doctoral Degree Requirements: The Ph.D. program in Public History requires 72 credit hours. Students complete 21 credit hours in a public history field, including an internship; 21 credit hours in a history field; 6 credit hours in an outside field; and 24 credit hours of dissertation work.

Student Financial Support: Graduate teaching assistantships are available to students in all programs and are awarded by open competition.

Other Relevant Information: The application deadline for fall semester is January 15; students are admitted for the fall semester only.

Click on **Graduate Courses** for current course information.



Horticultural Science

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Horticultural Science	Y			Y		Y		

GRADUATE FACULTY

Directors of Graduate Programs:

C. Gunter, Box 7609, chris_gunter@ncsu.edu, Horticultural Science
H. T. Kraus, Box 7609, 919/515-1208, helen_kraus@ncsu.edu, Horticultural Science

Named Professors: M. D. Boyette, G. C. Yencho; Named Distinguished Professors: N. G. Creamer, D. J. Werner; Professors: W. G. Buhler, J. M. Dole, G. E. Fernandez, W. C. Fonteno, J. L. Kornegay, D. W. Monks, J. C. Neal, P. M. Perkins-Veazie, T. G. Ranney, J. R. Schultheis, T. C. Wehner, B. E. Whipker, F. H. Yelverton, E. Young; Adjunct Professors: J. L. Gibson, M. S. McGinnis, P. S. Zorner; Emeritus Professors: W. E. Ballinger, T. E. Bilderback, S. D. Clouse, A. A. DeHertogh, P. R. Fantz, R. G. Gardner, W. R. Henderson, L. E. Hinesley, W. E. Hooker, T. R. Konsler, C. M. Mainland, T. J. Monaco, P. V. Nelson, E. B. Poling, M. A. Powell, W. A. Skroch, S. E. Spayd, C. R. Unrath, L. G. Wilson; Associate Professors: L. K. Bradley, J. D. Burton, J. M. Davis, B. Fair, C. Gunter, B. E. Jackson, K. M. Jennings, H. T. Kraus, A. V. Lebude, D. R. Panthee, M. L. Parker, J. T. Sherk, A. M. Spafford; Research Associate Professors: D. G. Seth Carley; Emeritus Research Associate Professors: G. C. Allen; Adjunct Associate Professors: J. S. Owen; Emeritus Associate Professors: J. D. Williamson; Assistant Professors: R. D. Dunning; Adjunct Assistant Professors: G. G. Gusmini

The NC State Horticultural Science Graduate Program offers one of the most comprehensive programs in the country – providing students with a broad selection of courses and projects ranging from applied industry-oriented studies to molecular biology. Studies may focus on commodity areas such as floriculture, ornamental and landscape horticulture, pomology (fruit crops) and olericulture (vegetables) or on cross-commodity topics such as plant physiology, breeding and genetics, genomics, herbicide physiology and weed control, nutrition, propagation, tissue culture, growth regulators, sustainable agriculture, postharvest physiology, and controlled environments.

Admission Requirements: To be admitted, a student should have completed course work in mathematics, chemistry (inorganic and organic), genetics, genomics/bioformatics, plant physiology, and several courses in horticulture, agronomy and/or botany (plant biology). Priority is given to students who have also completed courses in biochemistry, plant pathology, entomology, soil science, cellular and molecular biology, statistics and physics. An applicant deficient in course work may be admitted on a provisional basis until the deficiency is made up. Applicants must provide the basic Graduate Record Examination (GRE) scores, Test of English as a Foreign Language (TOEFL) scores (applicants from non-English speaking countries), three letters of reference, copy of transcript for each prior degree, statement of career goals, and current resume or CV.

Master's Degree Requirements: The Master of Science (M.S.) degree is a research-oriented degree requiring 30 credit hours and a written thesis. Four one-credit core courses, statistical courses, ST 511 and ST 512 or their equivalent, and two credits of HS 601 must be completed. Up to 6 of the 30 credits may be research credits (HS 695). At least 20 semester hours must be 500, 600 or 700 level courses, and 6 of these credits must be at the 700 level. In addition, at least 18 credit hours must be from letter-graded courses.

For students wishing a more general educational background in horticultural science without the thesis requirement, the Master of Horticultural Science (M.H.S.) degree is offered. The M.H.S. requires 36 credit hours. Eighteen (18) credits must be at the 500-700 level. Two credits of HS 601 are required. Two statistical courses, ST 511 and ST 512 or their equivalent, unless waived by the student's advisory committee and Director of Graduate Programs. Up to 12 hours of

400-level courses can be taken as a part of the M.H.S. program, however, only six hours of HS 400-level courses are allowed. (The NCSU Graduate School does not allow any 400-level courses from the home department, but only requires 30 credit hours for a Master's degree. We require 36 credits, of which 6 credits can be HS 400-level courses. Permission from the NCSU Graduate School is required for HS 400-level courses.) Students are encouraged, but not required, to fulfill the four Horticultural Science core course requirement. The M.H.S degree is also available through Distance Education.

Doctoral Degree Requirements: The Ph.D. program is designed for individuals desiring to pursue careers in research and teaching. A minimum of 54 credit hours beyond the Master of Science program is required. Three credits of core courses and two credits of HS 601 are required, if not taken as part of a prior M.S. degree in the Department of Horticultural Science.

Student Financial Support: The department has a limited number of assistantships available on a competitive basis for promising students. The assistantship includes salary, tuition and health insurance as covered under the Graduate School's Graduate Student Support Plan. Applicants are considered for assistantship support at the time of application. Those interested should apply at least seven months prior to their anticipated enrollment date. Also, many faculty programs have research grant-funded assistantships; potential students should contact faculty directly for those programs of interest.

Other Relevant Information: Facilities for graduate studies include 40,500 square feet of greenhouse space on main campus and the nearby Horticultural Field Lab; the University Phytotron (available for controlled environmental studies on horticultural crops); 19 well-equipped laboratories; 14 controlled temperature storage rooms, an extensive collection of plant materials, both living and preserved; and a variety of climates and soils from coast to mountains in North Carolina on fifteen outlying research stations and three research farms. North Carolina has a dynamic horticulture industry, ranking among the top ten in many of the commodity areas.

Click on **Graduate Courses** for current course information.

Industrial Design

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Industrial Design						Y		

GRADUATE FACULTY

Director of Graduate Programs:

K. A. Umstead, Box 7701, <u>kamyers2@ncsu.edu</u>, Graphic and Industrial Design

Professors: C. D. Cox, H. Holljes, S. B. Joines, T. Liu; *Emeritus Professors:* V. Foote, C. E. Joyner, H. Khachatoorian; *Associate Professors:* H. S. Armstrong, T. W. Buie, L. M. Diaz, P. J. Fitzgerald, C. Gill, P. R. Hooper, B. Jin, B. W. Laffitte; *Emeritus Associate Professors:* V. K. Plume, D. G. Raymond, S. M. Toplikar; *Assistant Professors:* D. A. Ham, M. O. Peterson, K. A. Umstead; *Teaching Assistant Professors:* W. Ginn

Industrial Design is the professional service of creating and developing concepts and specifications that optimize the value, function and appearance of products and product systems to the mutual benefit of both user and manufacturer. This service is often provided in the context of a cooperative working relationship with other members of a development group.

Typical groups include management, marketing, engineering and manufacturing specialists. Industrial designers place special emphasis on human characteristics, needs and interests. These require particular understanding of visual, tactile, safety and convenience criteria. Industrial designers combine these considerations with practical concern for technical processes and requirements for manufacture; marketing opportunities and economic constraints; and distribution, sales and servicing arrangements. Industrial designers are guided by the awareness of their obligations to protect and promote public safety and well-being; to respect the environment; and to observe ethical business practices. Augmenting transdisciplinary practices, emerging areas of industrial design include design research and experience design.

Graduates with a Master of Industrial Design have career opportunities in four general areas; corporate design offices in manufacturing companies, design consulting firms, governmental agencies and educational institutions.

Admissions Requirements: Students must make application to the Department of Graphic Design and Industrial Design by January 5. In addition to Graduate School requirements, the Department requires department personal data forms, a digital portfolio of design work, resume, and a statement of intent. The GRE is required for students whose first degree is not in Industrial Design.

Master's Requirements: The Master of Industrial Design degree requires a minimum of

- 48 credit hours for applications with a Bachelor's degree in Industrial Design (Track II), or
- 78 credit hours for applications with Bachelor's degrees in an area other than Industrial Design (Track III).

The program generally does not accept transfer credits in lieu of required coursework at NC State. Studio credits presented for elective transfer must be accompanied by a portfolio of work from the courses under consideration.

Student Financial Support: The Department has limited provisions for tuition remission and assistantships. Assistantships are awarded on the basis of student and departmental needs. Assistantship requests should be made to the Department of Graphic Design and Industrial Design and should be submitted with the application for admission (for incoming students) or by advertised deadline (for continuing students).

Click on **Graduate Courses** for current course information.



Industrial Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Industrial Engineering	Y			Y		Y		

GRADUATE FACULTY

J. L. Swann, *Department Head*

Directors of Graduate Programs:

M. G. Kay, Box 7906, 919/515-2008, kay@ncsu.edu, Industrial Engineering Y. Fathi, Box 7906, 919/515-6417, fathi@ncsu.edu, Industrial Engineering

Named Professors: P. Cohen, S. Fang, R. E. King, R. A. Wysk; Named Distinguished Professors: R. Uzsoy; Named Distinguished University Professors: T. J. Hodgson; Distinguished Professors: O. A. Harrysson, J. L. Swann; Professors: G. D. Buckner, Y. Fathi, J. S. Ivy, D. B. Kaber, Y. Lee, L. A. Martin, M. E. Mayorga, R. J. Narayan, J. R. Wilson; Adjunct Professors: S. M. Hsiang, G. Kazemi Tutunchi, C. D. Rock; Emeritus Named Professors: A. L. Prak, S. D. Roberts; Emeritus Professors: M. A. Ayoub, R. H. Bernhard, T. Johnson, R. G. Pearson, W. A. Smith, R. E. Young; Emeritus Distinguished Professors: C. T. Culbreth Jr; Associate Professors: J. Dong, M. G. Kay, J. P. Lavelle, C. S. Nam, B. Starly, D. P. Warsing; Research Associate Professors: J. Taheri, H. A. West II; Adjunct Associate Professors: N. J. Currie, B. Denton, R. Stoll, A. R. Vila-Parrish; Emeritus Associate Professors: T. L. Honeycutt, E. Sanii; Assistant Professors: K. B. Chen, O. Y. Ozaltin, X. Xu; Research Assistant Professors: S. S. Ahiska, J. E. Mason, M. Swangnetr, L. A. Tupler; Teaching Professors: S. D. Jackson, H. L. Nuttle; Teaching Associate Professors: K. T. Reynolds; Lecturers: M. R. Spano

The graduate faculty of the Edward P. Fitts Department of Industrial and Systems Engineering supports academic and research interests in four areas: (1) manufacturing systems (manufacturing processes, medical device manufacturing systems, CAM, CIM, robotics, automation, rapid prototyping and concurrent engineering); (2) production systems (logistics systems, supply chain management, scheduling, inventory control, materials handling, facility design, furniture manufacturing and management, quality control, and engineering economics); (3) systems analysis and optimization (health systems, stochastic processes, simulation, mathematical programming, and soft computing); and (4) ergonomics (human performance, occupational safety, and biomechanics). The department faculty actively supports independent graduate degree programs in operations research, integrated manufacturing systems engineering, textile technology and management, and financial mathematics.

Admission Requirements: Applications are accepted from undergraduate majors in engineering and in the behavioral, physical and mathematical sciences who meet prerequisites in calculus and linear algebra, computer science, and statistics.

Master's Degree Requirements: The M.S. degree requires 30 credit hours and involves depth of study in a specified area of concentration, nine hours in a minor, and six hours of research credit. The Master of Industrial Engineering (M.IE.) degree may be obtained by course work only; project work is optional. A minimum of 33 credit hours is required for the M.IE.

Doctoral Degree Requirements: This degree requires 72 credit hours of course and research work beyond the Bachelor's degree. Undergraduate students with superior credentials may apply directly to the doctoral program and bypass the master's degree. For students who have completed the Master's degree, typically 30 to 36 hours of additional course work are required. A departmental written qualifying examination is required.

Student Financial Support: Research and teaching assistantships are available on a competitive basis to early

applicants. Fellowships that supplement assistantship stipends are available to U.S. applicants with superior credentials. Award priority is given to Ph.D. and then to M.S. applicants.

Click on **Graduate Courses** for current course information.

Integrated Manufacturing Systems Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Integrated Manufacturing Systems Engineering						Y		

GRADUATE FACULTY

Directors of Graduate Programs:

S. D. Jackson, Box 7915, 919/515-3808, <u>sdjackso@ncsu.edu</u>, Integrated Manufacturing Systems Engineering S. G. Allen, Box 8114, 919/515-5584, <u>steve_allen@ncsu.edu</u>, Business Management

Named Professors: R. L. Barker, M. D. Boyette, R. E. King, R. A. Wysk; Named Distinguished University Professors: R. B. Handfield, T. J. Hodgson, M. Rappa; Distinguished Professors: O. A. Harrysson; Professors: G. D. Buckner, Y. A. Chen, M. Chow, T. G. Clapp, E. C. Dickey, Y. Fathi, T. K. Ghosh, J. S. Ivy, W. J. Jasper, J. A. Joines, J. W. Leach, Y. Lee, T. J. Little, L. A. Martin, W. J. Rasdorf, P. I. Ro, J. P. Rust, A. M. Seyam, J. R. Wilson; Research Professors: B. L. Edge, D. L. Lubkeman, T. M. Paskova; Adjunct Professors: M. Devetsikiotis, T. M. Paskova; Emeritus Named Professors: S. D. Roberts, C. F. Zorowski; Emeritus Professors: R. E. Carawan, P. L. Grady, T. Johnson, W. A. Smith, R. E. Young, C. F. Zorowski; Emeritus Distinguished Professors: C. T. Culbreth Jr; Associate Professors: D. R. Bahler, P. Banks-Lee, K. A. Barletta, R. R. Collazo, J. Dong, G. L. Hodge, H. Huang, M. G. Kay, N. Lu, K. Mitchell, D. E. Saloni, D. P. Warsing; Research Associate Professors: J. Taheri; Adjunct Associate Professors: B. Denton; Emeritus Associate Professors: S. N. Chapman, E. Sanii; Assistant Professors: S. D. Jackson, H. L. Nuttle, C. L. Reynolds Jr

The Integrated Manufacturing Systems Engineering (IMSE) Institute was established in 1984. IMSE provides multidisciplinary graduate-level education and practical training opportunities in the theory and practice of integrated manufacturing systems engineering at the masters level. IMSE focuses on providing a manufacturing presence and a program environment in the College of Engineering where faculty, graduate students and industry can engage cooperatively in multidisciplinary graduate education, basic and applied research, and technology transfer in areas of common interest related to modern manufacturing systems technology. The objective of the IMSE program is to offer students with traditional discipline backgrounds in engineering and the physical sciences an opportunity to broaden their understanding of the multidisciplinary area of manufacturing systems. Core areas of concentration are offered in manufacturing systems, logistics, mechatronics, and biomanufacturing.

Admission Requirements: Admission to the IMSE master's program requires a B.S. degree from an accredited institution in engineering, physics, mathematics, or computer science. Check with the Institute if your degree is in a field other than these listed.

Master's Degree Requirements: The IMSE program requires a minimum of 27 hours of graduate course work and six hours of research project. The graduate course work includes five required core courses that provide a multidisciplinary overview of subject materials basic to manufacturing systems, logistics, mechatronics, and biomanufacturing. Specialization is provided in the student's elective courses. The six hours of research project is performed either individually or in teams in areas that compliment and reinforce the graduate course work.

The IMSE degree is now available through Engineering Online as a distance program. Application to the IMSE Distance Education program is the same as the on-campus program: www2.acs.ncsu.edu/grad/applygrad.htm. More information is available via the IMSE Institute (nkevans@ncsu.edu, 919-515-3808).

Student Financial Support: Assistantships, fellowships and internships are available to qualified students. The full financial support package covers tuition and health insurance.

Fellowship/Internship: The IMSE internship program was established to provide a cooperative industrial and academic experience for some IMSE students and our industrial sponsors. Several Fellowship/Internships awards are made available every year for special training in IMSE member companies. Students who are selected to participate in the internship program receive financial support for four semesters and one summer. Typically, the student attends classes for two semesters (fall and spring), works at the sponsor company for the following summer and fall semester, and completes the IMSE course requirements the following spring semester. The student uses the experience at the sponsor company as the basis for their IMSE research project.

Other Relevant Information: The Institute is supported by an industrial affiliates group of member companies. They have included ABB, ABCO Automation, AIMS, Applied Materials, AT&T, Bayer, B/S/H, Biogen Idec, Bosch Tools, CDB Corporation, CP&L, Carver Machine Works, Castle Hill Technologies, Caterpillar, Closure Medical, Corning Cable Systems, CSX, Inc., Dupont, Elkay, Ford Motor, GE, GKN, IBM, Intel, John Deere Turf Care, Meadows Mills, Morganite, Nekton Technologies, Nortel, OdorSweep, Potters Industries, Rubbermaid, Rxmedic, Snap-on Incorporated, and Swift Water Industries. The Institute interacts with member companies through an Industry Advisory Board and internships.

Core areas of concentration are offered in manufacturing systems, logistics, mechatronics, and biomanufacturing.

I. Manufacturing Core (one from each area)

Area 1

CSC 510 Software Engineering CSC 742 Database Management Systems ISE(CSC,OR) 762 Computer Simulation Techniques ISE(CSC) 441 Introduction to Simulation ISE 719 CIM System Design

Area 2

MBA 520 Managerial Finance ISE 510 Applied Engineering Economy ISE 711 Capital Investment Economic Analysis

Area 3

ISE 514 Manufacturing Product Engineering ISE 707 Real-time Control of Automated Manufacturing ISE 715 Manufacturing Process Engineering ISE 716 Automated Systems Engineering

Area 4

ISE 723 Production Planning, Scheduling and Inventory Control

Area 5

MAE(WPS) 534 Mechatronic Design MAE 742 Mechanical Design for Automated Assembly

II. Logistics Core (one from each area)

Area 1

CSC(ECE) 510 Software Engineering CSC 742 Database Management ISE(CSC,OR) 762 Computer Simulation Techniques ISE 441 Introduction to Simulation ISE 719 CIM Systems Design

Area 2

MBA 520 Managerial Finance ISE 510 Applied Engineering Economy

Area 3

MBA 541 Supply Management

MBA 542 Supply Chain Logistics

Area 4

ISE 723 Production Planning, Scheduling and Inventory Control

Area 5

ISE 754 Logistics Engineering

III. Mechatronics Core (one from each area)

Area 1

MAE (WPS) 534 Mechatronic Design

ECE 556 Agent-Based Mechatronics Systems

Area 2

MAE 513 Principles of Structural Vibration

MAE(ECE) 535 Design of Electromechanical Systems

MAE 742 Mechanical Design for Automated Assembly

Area 3

ECE 511 Analog Electronics

ECE 555 Computer Control of Robots

ECE 755 Advanced Robotics

Area 4

CSC(ECE) 517 Object-oriented Languages and Systems

ECE 561 Embedded Systems Design

ECE 742 Artificial neural Networks

ISE 719 CIM System Design

Area 5

ECE 437 Distribution Real-time Control Systems

ECE 516 System Control Engineering

ISE 707 Real-time Control of Automated Manufacturing

ISE 716 Automated Systems Engineering

IV. Biomanufacturing Core (one from each area)

Area 1

ISE/OR/CSC 762 Computer Simulation

ISE 719 CIM Systems Design

Area 2

MBA 520 Managerial Finance

ISE 520 Applied Engineering Economy

Area 3

ISE 514 Manufacturing Product Engineering

ISE 707 Real-Time Control of Automated Manufacturing

Area 4

ISE 723 Production Planning, Scheduling, and Inventory Control

Area 5

ISE 789 Quality Control in Biomanufacturing Applications

TE 589 Six Sigma Quality

Click on **Graduate Courses** for current course information.

International Studies

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
International Studies						Y		

GRADUATE FACULTY

Director of Graduate Programs:

H. H. Hobbs, Box 8102, heidi hobbs@ncsu.edu, Political Science

Named Distinguished Professors: M. D. Schulman; Professors: F. W. Cubbage, D. M. Daley, M. A. Johnson, A. F. Khater, J. Kuzma, A. W. Mitchell, R. P. Patterson, M. A. Renkow, E. O. Sills, A. J. Taylor; Emeritus Professors: L. S. Bull, E. W. Erickson, R. L. Moxley, J. C. Shih, M. S. Soroos, M. A. Witt; Emeritus Distinguished Professors: S. W. Buol; Associate Professors: A. B. Bigelow, W. A. Boettcher, C. E. Griffin, H. H. Hobbs, J. Kiwanuka-Tondo, R. C. Kochersberger, L. V. Kochtcheeva, R. S. Moog, M. T. Nance, T. V. Reid, M. J. Struett, J. M. Wallace, S. B. Wiley; Emeritus Associate Professors: L. D. Gustke, R. C. Kochersberger, R. J. Thomson, S. T. Warren; Assistant Professors: M. Khisa, J. Liao, R. J. Reardon; Teaching Assistant Professors: T. A. Appling, J. P. Crane-Seeber, D. Mitin, A. G. Solari

The Master of International Studies (MIS) is a 36 credit, non-thesis professional degree program that prepares students for careers in government service, non-profit administration, international business, and international student services and study abroad. Located in the School of Public and International Affairs, the MIS degree draws upon faculty and courses from colleges and departments across the university. Approximately half of the course work for the degree is devoted to developing international knowledge and competencies. The remaining coursework is comprised of regional, topical, professional or technical specializations designed by students in consultation with their faculty advisors. The program has an excellent internship program that contributes to job placement upon graduation.

Admission Requirements: Applicants must provide GRE scores and a current resume in addition to other application materials required by the Graduate School.

Degree Requirements: The requirements for the MIS degree are as follows:

- 1. 36 credit hours of course work;
- 2. Core Curriculum (15 hours). One course from each of the following five groups:

Group A - International Relations

Group B - Comparative Politics/Societies

Group C - International Law and Organization

Group D - International Economy/Development

Group E - Research Methods

- 3. Individualized specialization (12-15 hours). The specialization may be in a geographical region (e.g., Europe, Latin America), an international topic (e.g., security, global governance, sustainable development), a professional field (e.g., public administration, non-profit management), or a technical specialty (e.g., Geographic Information System-GIS);
- 4. Capstone seminar (3 hours) and oral presentation of work to faculty and peers;
- 5. International experience or study abroad; and

6. Competency in a foreign language as determined by the Department of Foreign Languages and Literatures (FLL).

Landscape Architecture

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Landscape Architecture						Y		

GRADUATE FACULTY

Directors of Graduate Programs:

C. F. Delcambre, Box 7701, 919/513-4320, <u>cfdelcam@ncsu.edu</u>, Landscape Architecture E. H. Bressler, Box 7701, 919/515-5333, <u>gene_bressler@ncsu.edu</u>, Landscape Architecture

Professors: R. F. Abrams, E. H. Bressler, M. E. Deming, D. B. Hill, R. C. Moore, A. R. Rice; Professors of the Practice: P. K. Kjaer, R. L. Swink; Emeritus Professors: H. A. Devine, M. J. Malecha, R. R. Wilkinson; Associate Professors: K. M. Boone, A. A. Fox, F. H. Magallanes, T. H. Shear, J. T. Sherk; Research Associate Professors: N. G. Cosco; Assistant Professors: C. Pasalar; Assistant Professors of the Practice: C. A. Flink; Teaching Assistant

Professors: C. F. Delcambre

Course offerings or research facilities are available in the following areas: site planning and design, landscape history, urban public spaces, community design, regional design, resource management, outdoor learning environments, international urban and rural landscapes, and specialized landscapes.

Admission Requirements: The best-qualified applicants are accepted up to the maximum number of spaces that are available for new students. Exceptions to the minimum 3.00 GPA may be made for students with special backgrounds, abilities and interests.

Master's Degree Requirements.

I. Accredited First Professional Degree in Landscape Architecture: Candidates follow an 82-hour sequence of courses over a six-semester period. Three semesters of the program of study are determined by the required curriculum. The last three semesters of study are outlined by the student's Chair of the Department, Director of Graduate Programs, and/or advisor. Research and case studies lead to the final project and design application. The investigative direction is set in collaboration with the chair of the faculty committee. A formal presentation of findings to the faculty, student body and local professionals is required. The summary research and project report must be submitted to the College of Design faculty to meet the graduation requirements. II. Advanced Studies in Landscape Architecture: Candidates with an accredited undergraduate Landscape Architecture degree follow a 48-hour sequence of courses. Twenty-seven hours of electives are chosen through advising with the Director of Graduate Programs, advisors and faculty committee. Comprehensive research work is required for a final project with a final report is required. A formal presentation of findings to the faculty, student body and local professionals is also required.

Other Relevant Information: Students have the option of including a graduate minor in their course of studies. Minors can be in any other graduate program offered at NC State, UNC-CH and Duke University. Some examples of graduate minors are: natural resources, parks, recreation and tourism management, architecture, education, planning, civil engineering, and art and design. The College of Design includes the Center for Universal Design, the Office of Research, Extension & Engagement, and the Natural Learning Initiative.

Click on **Graduate Courses** for current course information.

Liberal Studies

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
<u>Liberal Studies</u>					Y			

GRADUATE FACULTY

Director of Graduate Programs:

M. D. Garval, Box 8106, 919/260-1768, garval@ncsu.edu, Foreign Languages and Literatures

Distinguished Professors: A. H. Harrison; Professors: J. P. Braden, G. L. Comstock, M. D. Garval, J. K. Jameson, D. M. Marchi, S. C. Nassar, J. A. Pasten, R. P. Patterson, R. W. Slatta, K. S. Vincent, C. A. Warren, R. A. Waschka; Clinical Professors: B. L. Sherman; Emeritus Professors: C. K. Coe, D. H. Crumbley, M. L. Krotee, J. S. Lapp, L. H. MacKethan, C. R. Miller, M. H. Thuente; Associate Professors: K. I. Allen, A. O. Behnke, A. B. Bigelow, C. C. Brookins, J. R. Brunet, J. M. Casper, A. A. de Souza e Silva, S. L. Desmarais, M. B. Edwards, S. E. Garrigan, N. M. Haenn, K. A. Harwood, J. Kiwanuka-Tondo, R. S. Moog, D. M. Rieder, S. R. Stein, J. M. Wallace; Emeritus Associate Professors: P. F. Bitting, S. H. Kessler, R. E. Peterson, M. L. Vasu, S. T. Warren; Assistant Professors: C. D. Denson, J. Kertesz; Teaching Professors: G. D. Beckman, J. C. Kramer; Teaching Associate Professors: K. A. Bush, D. S. Murray; Teaching Assistant Professors: A. E. Arnold; Lecturers: A. E. Arnold

The Master of Arts in Liberal Studies (MALS) program is an interdisciplinary graduate program administered by the College of Humanities and Social Sciences. This is a broad, interdisciplinary program of part-time or full-time graduate study that integrates and expands the student's knowledge and awareness and that is geared to the student's personal interests. Each student, in consultation with an academic advisor, designs an individual program of study around an interdisciplinary theme or topic that is of intrinsic interest to the student or that relates to the student's professional or vocational interests. Students take graduate courses across a range of NC State departments as well as MALS seminars designed specifically for the program.

Admissions Requirements: Students entering the Master's program in liberal studies must have an undergraduate degree. In addition to the material required by the Graduate School, students applying are asked to submit a four to five page statement describing their objectives in doing a degree in liberal studies and a resume. GRE scores are not required. All applicants are interviewed.

Master's Degree Requirements: Thirty hours of course work made up of (1) three MALS seminars or two MALS seminars and a research methods course, (2) 18 hours representing the student's interdisciplinary theme or concentration, and (3) a three-hour culminating project. Examples of concentrations that are well supported by graduate courses in the NC State curriculum are: science, technology and society, the American experience and leadership.

Click on **Graduate Courses** for current Liberal Studies course information.

Management

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Management						Y		

GRADUATE FACULTY

Director of Graduate Programs:

S. G. Allen, Box 8114, 919/515-5584, steve allen@ncsu.edu, Business Management

Professors: S. G. Allen, D. H. Henard, S. K. Markham, D. P. Pagach; Professors of the Practice: L. Shamblin; Associate Professors: P. W. Mulvey; Emeritus Associate Professors: J. K. McCreery

The Jenkins Graduate School of Management, part of the North Carolina State University College of Management, in partnership with the Skema Business School in Paris, France, offers a Master's degree in Management as part of the Global Luxury and Management program. The curriculum is designed to give students with a range of backgrounds a strong exposure to core business management skills while providing in-depth exposure to the global luxury industry. It was designed specifically for students who are looking to create a personal competitive advantage for today's global luxury job market.

Students in the program come from around the world and classes will be held in both the United States and France. Students are taught by international professors who are leaders in their fields. Interactions with global luxury firms will occur both in the classroom, study tours and via internships.

Admission Requirements: Applicants are required to complete the standard NC State Graduate School application process. Applicant assessments will be done on an individual-by-individual basis. Concurrent acceptance activities will be at both Skema and NC State. GMAT or GRE scores are not required of applicants. International applicants must complete the TOEFL or IELTS.

U.S. applicants will need a valid U.S. passport and visa for traveling to France. Upon acceptance to the program, students can apply for a visa. Applicants should also be prepared for additional program costs (airfare to and from Europe and travels within Europe, lodging and meals while in France).

Master's Degree Requirements: The MM degree requires 33 credit hours and can be completed in one year. It does not require courses in subject areas such as economics and operations management which are required in the MBA. This one-year program awards two master degrees:(1) a degree from NC State University and (2) a degree from Skema Business School.

Core Courses:

MBA 564 Business Relationship Management

BUS 590 Analytic Decision Making

BUS 590 Business and Legal Ethics

BUS 590 Global Luxury Digital Marketing and Social Media

BUS 590 Global Luxury Leadership, Communication and Negotiation

BUS 590 Luxury Professional Development

BUS 590 Luxury Consumer Seminar

BUS 590 Luxury Marketing Strategy

BUS 590 Supply Chain Management

Other Relevant Information: After two years of full-time work experience, qualified students who earn the dual

master degree in Management are eligible to apply to the NC State MBA program. This would require an additional 30 hours of study. Students must complete a separate application to the MBA program.

Marine, Earth and Atmospheric Sciences

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Climate Change and Society						Y		
Marine, Earth, and Atmospheric Sciences	Y			Y				

GRADUATE FACULTY

J. F. Levine, **Department Head**

Directors of Graduate Programs:

E. L. Leithold, Box 8208, 919/515-7282, leithold@ncsu.edu, Marine, Earth and Atmospheric Sciences J. F. Levine, Box 8208, 919/513-6397, jelevine@ncsu.edu, Marine, Earth and Atmospheric Sciences V. P. Aneja, Box 8208, 919/515-7808, viney_aneja@ncsu.edu, Marine, Earth and Atmospheric Sciences

Named Distinguished Professors: J. M. Burkholder; Professors: V. P. Aneja, D. J. DeMaster, D. B. Eggleston, R. V. Fodor, D. P. Genereux, P. J. Harries, R. He, G. M. Lackmann, E. L. Leithold, J. F. Levine, D. A. McConnell, N. Meskhidze, H. Mitasova, M. D. Parker, W. A. Robinson, M. H. Schweitzer, W. J. Showers, M. K. Stoskopf, L. Xie, S. E. Yuter, Y. Zhang; *Research Professors*: O. B. Brown, J. C. Fountain, T. S. Hopkins, K. E. Kunkel, S. Rebach; Adjunct Professors: J. J. Bates, N. E. Blair, S. W. Chang, T. F. Clark, B. A. Colle, W. J. Cooper, R. P. Dziak, D. R. Easterling, P. Hamilton, A. F. Hanna, R. S. Harmon, D. E. Kingsmill, S. E. Koch, E. H. Koster, S. K. Leduc, N. S. Levine, J. M. Morrison, S. T. Rao, R. Rotunno, C. R. Smith, S. Yu, C. L. Ziegler, P. J. Ziemann; *Emeritus Professors*: S. S. Arya, H. S. Brown, B. J. Copeland, J. M. Davis, J. C. Fountain, J. P. Hibbard, D. Kamykowski, L. J. Langfelder, L. J. Pietrafesa, S. Raman, F. H. Semazzi, P. Shaw, C. W. Welby, E. A. Wheeler, T. G. Wolcott; *Associate Professors:* A. Aiyver, D. R. Bohnenstiehl, J. Liu, C. L. Osburn, M. D. Petters, A. Schnetzer, K. W. Wegmann; Research Associate Professors: C. J. Thomas; Adjunct Associate Professors: G. B. Avery, S. Basu, M. A. Baxter, R. X. Black, R. P. Boyles, S. A. Braun, S. Bulusu, D. H. Doctor, B. S. Ferrier, J. C. Gosse, C. D. Harrington, Y. Hu, C. Jang, C. E. Konrad, B. Kosovic, J. Lin, J. J. Luczkovich, K. S. McNeal, R. D. Nair, C. Nelson, J. C. Reid, J. Rudek, J. C. Warner, S. N. White, R. W. Wiener; *Emeritus Associate Professors*: A. J. Riordan, E. F. Stoddard, D. L. Wolcott; *Assistant* Professors: C. A. Arendt, S. P. Bishop, P. K. Byrne, E. G. Hyland, R. W. Paerl; Research Assistant Professors: K. Wang; Emeritus Research Professors: D. A. Russell; Adjunct Assistant Professors: G. W. Bell, P. W. Belmont, M. Brennan, A. G. Carlton, J. J. Charney, D. R. Corbett, P. W. Curley, J. M. Dahl, S. H. Ensign, B. J. Etherton, S. Gasso, N. S. Hall, E. L. Hestir, A. L. Holder, G. J. Kirkpatrick, A. J. Lewitus, B. Liu, H. Liu, K. M. Mahoney, J. E. McNinch, D. B. Mechem, D. S. Niyogi, S. B. Phillips, B. J. Puckett, R. E. Reed, P. A. Roelle, B. Schaeffer, C. J. Schreck, G. A. Sinclair, R. C. Tacker, Q. Tong; *Teaching Assistant Professors:* L. Falk; *Lecturers:* B. K. Eder, J. T. Walker

Graduate programs are offered in atmospheric science, earth science, and marine science. Within marine sciences the subdisciplines of biological, chemical, geological and physical oceanography are recognized by the profession.

Admission Requirements: A bachelor's degree with research experience or a master's degree is required for entry into the Ph.D. program. A bachelor's degree in a science, mathematics or engineering is required for entry into the M.S. program in atmospheric science, earth science, and biological, chemical, geological or physical oceanography. Undergraduate field camp is required of all students in the M.S. program in earth science; this requirement may be fulfilled before or after admission. An M.S. degree with a non-thesis option for students is available and admission to this option must be requested at the time of application.

Master's Degree Requirements: The M.S. degree requires a minimum of 30 credit hours. Specific course requirements are determined by the advisory committee of each student. However, MEA 601 Seminar is required of all thesis M.S. students no later than the third semester in residence. Marine science students are required to take core courses in two of

the three subdisciplines other than their own.

Doctoral Degree Requirements: Specific courses are determined by the student's advisory committee. Registration in seminar, MEA 801, is required of all Ph.D. students no later than the fourth semester in residence. Marine science students are required to take core courses in all three subdisciplines other than their own; this requirement may be fulfilled at the M.S. level.

Student Financial Support: Research and teaching assistantships are available.

Other Relevant Information: Students are assigned initial advisors upon admission. It is the student's responsibility to secure the consent of a faculty member to serve as the permanent advisor who will chair or co-chair the advisory committee.

Click on **Graduate Courses** for current course information.

Materials Science and Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Materials Science and Engineering	Y			Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

A. Ivanisevic, Box 7907, aivanis@ncsu.edu, Materials Science and Engineering

Named Professors: S. A. Bedair, G. N. Parsons, Y. T. Zhu; Named Distinguished Professors: D. W. Brenner, C. C. Koch, J. Narayan, Z. Sitar; Distinguished Professors: J. J. Cuomo, J. Genzer, O. A. Harrysson, F. So, R. J. Spontak; Distinguished University Professors: D. E. Aspnes; Professors: H. Ade, C. M. Balik, E. C. Dickey, N. A. El-Masry, R. E. Gorga, A. Ivanisevic, J. L. Jones, J. Krim, T. H. LaBean, H. H. Lamb, K. L. Murty, R. J. Narayan, R. O. Scattergood, J. S. Strenkowski, Y. G. Yingling, X. Zhang, Y. Zhu; Research Professors: T. M. Paskova; Adjunct Professors: E. G. Loboa-Polefka, T. M. Paskova, J. T. Prater, J. Schwartz, T. Shen, F. Shimura; Emeritus Named Professors: R. F. Davis; Emeritus Professors: K. J. Bachmann, J. A. Bailey, H. Conrad, K. S. Havner, K. L. Moazed, H. Palmour; Emeritus Distinguished Professors: G. Lucovsky; Associate Professors: L. Cao, R. R. Collazo, D. L. Irving, J. S. Jur, J. Kasichainula, J. M. LeBeau, J. B. Tracy, D. Vashaee; Research Associate Professors: D. P. Griffis; Adjunct Associate Professors: A. Karoui, V. Zhirnov; Emeritus Associate Professors: S. N. Mathaudhu; Teaching Professors: C. L. Reynolds Jr; Teaching Associate Professors: C. P. Cass

Materials enable all of the engineering and high-technology fields that are an integral part of our society. Graduate programs in this department focus on understanding the structure, structure modification and properties of materials and the development of new or improved materials and advanced processing methods that are critical links between the design and the realization of new systems for manufacturing, nanotechnology, energy, and biomaterials.

The M.S. and Ph.D. programs are research-based degree programs focusing on faculty-mentored, state-of-the-art materials research that leads to a thesis or dissertation.

The Master of Materials Science and Engineering is a non-thesis degree program designed for students from a variety of technical backgrounds interested in furthering their understanding of materials processing, characterization and properties. This program is appropriate for distance-education Masters students.

The Master of Nanoengineering is a multidisciplinary non-thesis degree program designed so students can declare a concentration in one of the following three areas: (1) Materials Science in Nanoengineering; (2) Nanoelectronics and Nanophotonics; or (3) Biomedical Sciences in Nanoengineering. This program is appropriate for distance-education Masters students.

Admission Requirements: In addition to the general admission requirements as set by the Graduate School, the department requires submission of GRE scores. Non-native English speakers also require a <u>minimum TOEFL score</u> as established by the Graduate School.

Master's Degrees Requirements: The Master of Science degree (M.S.) requires 30 credit hours of coursework/research and a research thesis. The Master of Materials Science and Engineering degree (M.M.S.E.) requires 30 credit hours of coursework only. The Master of Nanoengineering (M.NAE.) requires 30 credit hours of coursework only.

Doctoral Degree Requirements: The doctoral degree (Ph.D.) requires 72 credit hours of coursework/research, a

qualifying exam, and a research dissertation.

Student Financial Support: Students in the M.S. and Ph.D. graduate programs normally receive financial support in the form of research or teaching assistantships or fellowships.

Other Relevant Information: The department reflects the interdisciplinary nature of the field of Materials Science and Engineering. A substantial number of current graduate students majored in fields other than but related to materials, and the department has associated graduate faculty from other departments supervising thesis and dissertation research.

Click on **Graduate Courses** for current course information.

Mathematics

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Applied Mathematics	Y			Y				
Mathematics	Y			Y				

GRADUATE FACULTY

A. E. Chertock, *Department Head*

Director of Graduate Programs:

P. A. Gremaud, Box 8205, 919/515-3085, gremaud@ncsu.edu, Mathematics

Named Professors: C. T. Kelley; Named Distinguished University Professors: H. T. Banks; Professors: J. D. Brown, S. L. Campbell, A. E. Chertock, M. T. Chu, L. Chung, J. D. Cohen, P. L. Combettes, R. O. Fulp, P. A. Gremaud, M. Haider, R. E. Hartwig, A. G. Helminck, P. L. Hersh, K. F. Hollebrands, H. Hong, I. Ipsen, K. Ito, N. Jing, E. L. Kaltofen, A. Kheyfets, Z. Li, X. Lin, A. L. Lloyd, S. R. Lubkin, R. H. Martin, N. G. Medhin, K. C. Misra, M. Olufsen, M. Paesler, M. S. Putcha, J. Rodriguez, M. Shearer, J. W. Silverstein, M. F. Singer, R. C. Smith, E. L. Stitzinger, S. M. Sullivant, H. T. Tran, S. V. Tsynkov, D. V. Zenkov; *Adjunct Professors:* J. T. Betts, O. J. Eslinger, M. V. Evans, S. P. Hamilton, C. L. Hughes, R. L. Ives, D. J. Lee, V. E. Manukian, J. T. Ottesen, R. P. Pawlowski, P. M. Schlosser, C. S. Woodward; *Emeritus Professors:* J. W. Bishir, R. E. Chandler, E. N. Chukwu, J. C. Dunn, J. E. Franke, R. O. Fulp, T. J. Lada, J. A. Marlin, C. Meyer, C. V. Pao, S. Schecter, J. F. Selgrade; Associate Professors: B. N. Bakalov, L. V. Bociu, S. Ghoshal, M. J. Kang, I. A. Kogan, L. K. Norris, T. Pang, S. Paur, N. P. Reading, A. Szanto; Adjunct Associate Professors: R. W. Ellson; Emeritus Associate Professors: G. D. Faulkner, D. E. Garoutte, L. B. Page, J. S. Scroggs, R. Silber, D. F. Ullrich; Assistant Professors: A. Alexanderian, K. B. Flores, R. Ke, T. Lidman, R. I. Liu, T. Nguyen, D. Papp, A. Saibaba, R. Sazdanovic, C. L. Vinzant; *Adjunct Assistant Professors*: K. S. Berenhaut, S. Bhattacharya, W. Chen, P. Drineas, J. D. Hauenstein, S. E. Howington, D. A. Knoll, A. Mahdi, J. E. Massad, J. L. Matthews, A. Mokhtari, V. Novak, Q. Zhang; *Teaching Associate Professors*: A. N. Duca, M. A. Fenn, J. R. Griggs; Teaching Assistant Professors: A. A. Cooper, B. L. Maultsby, B. B. Williams; Lecturers: W. Chen, T. J. Lada

The Department of Mathematics offers programs leading to the degrees of Master of Science and Doctor of Philosophy in mathematics and in applied mathematics. Students may opt for the concentration in computational mathematics, which is attached to the program in applied mathematics. The Concentration in Interdisciplinary Mathematics (MAI) is available to Ph.D. students in either Mathematics or Applied Mathematics. It is not available to Masters Students. Joint research endeavors with industrial and governmental partners are facilitated and encouraged. The Department of Mathematics also offers a Certificate.

Admissions Requirements: Applicants for admission should have an undergraduate or Master's degree in mathematics or equivalent. This should include courses in advanced calculus, modern algebra and linear algebra. Applicants with degrees in other subjects may be admitted but may be required to take certain undergraduate courses in mathematics without receiving graduate credit. GRE general scores are required. The GRE Subject Test in Mathematics is not required but a good score can be a positive factor in admission.

Master of Science Requirements: The M.S. degree requires a minimum of 30 credit hours. In addition to course requirements (27 credit hours), the M.S. degree requires a written Master's project for 3 hours credit.

Ph.D. Requirements: The Ph.D. requires a minimum of 72 credit hours. A student will typically take 50-60 semester hours of course credits for the Ph.D. These courses include one semester of modern algebra and one semester of mathematical analysis. The written preliminary examination consists of examinations in three areas of mathematics chosen by the student from 14 possibilities. The research dissertation should represent a substantial contribution to an

area of mathematics or its applications.

Student Financial Support: Teaching assistantships and some research assistantships are available. Teaching assistants benefit from a structured program of training in university-level teaching.

Other Information: The Department of Mathematics has a large number of workstations devoted exclusively to its graduate students.

Click on **Graduate Courses** for current course information.

Mechanical and Aerospace Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Aerospace Engineering	Y			Y				
Mechanical Engineering	Y			Y				

GRADUATE FACULTY

S. V. Ekkad, *Department Head*

Director of Graduate Programs:

K. J. Peters, Box 7910, 919/515-2365, kjpeters@ncsu.edu, Mechanical and Aerospace Engineering

Named Professors: S. V. Ekkad, F. Yuan, Y. T. Zhu, M. A. Zikry; Named Distinguished University Professors: T. A. Dow; Distinguished Professors: O. A. Harrysson; Professors: G. D. Buckner, T. Echekki, J. R. Edwards, T. Fang, A. Gopalarathnam, R. D. Gould, E. Grant, P. A. Gremaud, H. A. Hassan, X. Jiang, R. F. Keltie, C. Kleinstreuer, A. V. Kuznetsov, J. W. Leach, H. Luo, K. M. Lyons, G. Ngaile, K. J. Peters, A. Rabiei, P. I. Ro, R. O. Scattergood, L. M. Silverberg, J. S. Strenkowski, J. F. Tu, F. Wu, Y. Zhu; Adjunct Professors: C. S. Kim, M. Reyhanoglu, W. L. Roberts; Emeritus Named Professors: C. F. Zorowski; Emeritus Professors: J. A. Bailey, H. M. Eckerlin, F. J. Hale, F. D. Hart, H. A. Hassan, T. H. Hodgson, R. R. Johnson, D. S. McRae, J. C. Mulligan, R. T. Nagel, L. H. Royster, F. Y. Sorrell, C. F. Zorowski; Associate Professors: M. A. Boles, C. Chang, J. W. Eischen, S. M. Ferguson, C. E. Hall, H. Huang, Y. Jing, A. P. Mazzoleni, B. T. O'Connor, K. Saul, A. V. Saveliev; Assistant Professors: M. Bryant, L. Grace, K. Granlund, J. Liu, M. Muller, V. Narayanaswamy, M. R. Pankow, P. K. Subbareddy; Research Assistant Professors: S. D. Terry; Adjunct Assistant Professors: J. A. Cooke; Teaching Professors: R. R. Johnson; Teaching Associate Professors: P. B. Corson, C. M. Tran; Teaching Assistant Professors: S. E. Hollar

The *Mechanical Engineering* graduate program prepares students in all aspects of mechanical and thermal systems design and manufacturing. Course offerings and research programs for mechanical engineering students are available in applied mechanics; biomechanics; combustion; design and manufacturing: dynamic systems and control; energy conversion and systems; experimental mechanics; fluid dynamics; heat transfer; mechanics of materials; micro, nano and MEMS; and vibration and acoustics. Sub-areas include adaptive and auto adaptive structures, controls and system identification, CFD, energy conversion and renewable energy, materials processing and tribology, mechatronics, precision engineering, and reactive and multiphase flows.

Graduate students in the *Aerospace Engineering* program focus on aircraft and space systems design, analysis, and manufacturing. Students can select course offerings and research programs in aerodynamics and applied aerodynamics; aerospace propulsion; computational fluid dynamics; dynamics and design of spacecraft and space systems; flight dynamics and control; and multifunctional materials and smart structures. Sub-areas include acoustics, aeroelasticity, atomization, sprays, composite materials, reactive and multiphase flows, stability, and transition to turbulence.

Admission Requirements: An applicant to the master's program must be a graduate of an accredited undergraduate program with a B.S. degree in either mechanical or aerospace engineering. Graduates of other accredited programs in engineering, physical sciences and mathematics may be considered but will be required to make up undergraduate deficiencies without graduate credit. Provisional admissions, as well as exceptions, are sometimes granted under special circumstances. The most qualified applicants are accepted first. Applicants to the Ph.D. program must have met the M.S. admission requirements and additionally must satisfy the Ph.D. admissions requirements.

Master's Degree Requirements: The thesis-option M.S. degree programs in mechanical engineering and aerospace engineering require 21 hours of course credit and nine hours of thesis research. The non-thesis M.S. degree programs in mechanical engineering and aerospace engineering require 27 hours of course credit and a three credit-hour project. The

non-thesis M.S. degree programs in mechanical engineering and aerospace engineering are offered on campus and off campus through distance education.

Ph.D. Degree Requirements: A minimum of 72 hours of credit are required to obtain the Ph.D. degree. A direct path to the Ph.D. from the B.S. is also available with which the student is granted the M.S. degree "enroute" to the Ph.D. The enroute Ph.D. (direct to Ph.D. path) requires a minimum of 3.5 undergraduate GPA.

Student Financial Support: Various types of assistantships and fellowships are available. Awards are made to the most qualified applicants first and generally are not available for all students.

Other Relevant Information: Each new student chooses an area of specialty, selects an advisor and committee, customizes a program of study and begins research in the first semester of residence. The Director of Graduate Programs acts as a temporary advisor initially and should be contacted with questions.

Click on **Graduate Courses** for current course information.

Microbial Biotechnology

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Microbial Biotechnology						Y		

GRADUATE FACULTY

Director of Graduate Programs:

E. S. Miller, Box 7615, 919/513-1368, eric miller@ncsu.edu, Plant and Microbial Biology

Professors: M. Hyman, E. S. Miller; *Adjunct Professors:* D. van der Lelie; *Associate Professors:* S. B. Carson, P. T. Hamilton

The Master of Microbial Biotechnology Program (MMB) is recognized by the <u>Council of Graduate Schools</u> as a <u>Professional Science Master's degree</u> (PSM). The MMB degree combines training in Microbiology, Business and Biotechnology. This degree is specifically designed to prepare students for positions in the biotechnology, biopharmaceutical and agrobusiness industries. The program includes courses that involve semester-long interactions with local biotechnology companies as well as foundational courses in microbiology, business management and molecular biology.

Admission Requirements: Applications are invited from individuals holding B.S. or M.S. degrees in the physical and life sciences. Applications should be received before May 1 to be considered for Fall semester admission. The Graduate Record Exam (GRE) is required and should be taken sufficiently early so that scores can be submitted and evaluated along with the application. Other requirements include all relevant transcripts, three letters of recommendation and a personal statement that describes the applicant's career goals as well as why they are pursuing the MMB degree.

Master's Degree Requirements: The Master of Microbial Biotechnology (MMB) degree requires 40 credit hours, including four semesters involvement in an Industry Case Studies course, as well as a summer industry internship. This program also can be combined with a Master of Business Administration (MBA) offered through the College of Management.

Student Financial Support: A limited number of full-time participants in the Master of Microbial Biotechnology program may be eligible for Teaching Assistantships. The number of TA positions available varies every semester and there are no guaranteed positions. Students in the MMB program should assume that they will self-fund their education.

Click on **Graduate Courses** for current course information.

Microbiology

Degrees Offered:

	Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
N	Microbiology	Y			Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

E. S. Miller, Box 7615, 919/513-1368, eric miller@ncsu.edu, Plant and Microbial Biology

Named Professors: R. R. Dunn, A. M. Grunden, L. Jaykus, R. M. Kelly; Professors: P. Arasu, D. T. Brown, J. W. Brown, M. S. Chinn, M. A. Cubeta, F. De Los Reyes, M. C. Flickinger, F. J. Fuller, H. M. Hassan, S. Hu, M. Hyman, S. Kathariou, S. M. Laster, H. Liu, J. M. Mackenzie, C. C. Melander, E. S. Miller, I. T. Petty, B. Sherry; USDA Professors: F. Breidt; Adjunct Professors: D. van der Lelie; Emeritus Professors: W. J. Dobrogosz, G. H. Elkan, W. E. Kloos, G. Luginbuhl, P. E. Orndorff, L. W. Parks, J. C. Shih; Emeritus Named Distinguished University Professors: T. R. Klaenhammer; Associate Professors: R. Barrangou, C. Beisel, J. M. Bruno-Barcena, S. B. Carson, R. A. Ghiladi, P. T. Hamilton, M. E. Jacob, M. D. Koci, C. Lanzas, J. W. Olson, F. Scholle, M. L. Sikes, S. Thakur, G. J. Williams, J. A. Yoder; USDA Associate Professors: R. G. Upchurch; Emeritus USDA Professors: P. E. Bishop; Adjunct Associate Professors: W. M. Casey, J. M. Ligon, S. H. Shore; Assistant Professors: I. R. Elfenbein, J. E. Fogle, E. Gutierrez Rodriguez, M. Kleiner, J. G. Pierce, C. M. Theriot; USDA Assistant Professors: I. M. Perez Diaz; Adjunct Assistant Professors: J. L. Stephenson; Teaching Assistant Professors: C. C. Goller, M. E. Taveirne

Microbiology is an integral part of the life science and biotechnology disciplines across the North Carolina State University campus. The Microbiology Graduate Program involves research and education in laboratories and departments that form inter-disciplinary teams to address critical, global challenges for science and society. The MGP (http://harvest.cals.ncsu.edu/microbiology/) offers courses of study and research leading to the Ph.D., M.S., Master of Microbiology (M.M.) and Master of Microbiology (M.M.B.) degrees.

The research-based degrees (M.S and Ph.D.) offered by the program are designed to prepare students for careers in academic, industrial or research institute settings. Course offerings for Microbiology research students focus on microbial genetics and physiology, bioprocessing and fermentation, biotechnology, virology, immunology and host-pathogen interactions. Research throughout the program is diverse, emphasizing most areas where microbes, viruses and systems biology have relevance to basic science and biotechnology. Research opportunities for students involve many areas of specialization including biofuels, bioremediation, environmental microbiology, antibiotic resistance, extremophiles, bacterial pathogens, probiotics, developmental epigenetics, bacteriophages, inflammation modulation and viral pathogenesis; the list is long and broad. Financial support for study towards Ph.D. and M.S. degrees is limited, but can be available in the form of teaching/research assistantships and competitive fellowships.

The non-research-based Masters of Microbial Biotechnology (MMB) is a Professional Science Masters degree that combines concentrations in Microbiology, Business and Biotechnology. This degree is specifically designed to prepare students for positions in the biotechnology, biopharmaceutical and agrobusiness industries. The program includes courses that involve semester-long interactions with local biotechnology companies as well as foundational courses in microbiology, business management and molecular biology. The M.M. degree is a rigorous non-thesis degree that is designed for students who want a higher degree in microbiology but do not want to conduct research or are unable to commit to the time demands of a research degree. Many students in the M.M. program either work for local employers or are interested in subsequent applications to professional schools. Financial support is extremely limited for either M.M.B or M. M. students.

Admission Requirements: Applications are invited from individuals holding B.S. or M.S. degrees in the physical and life sciences. Applications should be received in the department before January 15 to be considered for Fall semester

admission. The Graduate Record Exam (GRE) is required and should be taken sufficiently early so that scores can be submitted and evaluated along with the application. Other requirements include all relevant transcripts, three letters of recommendation and a personal statement that describes the applicant's academic and career goals as well as their area of interest.

Master's Degree Requirements: The Master of Science (M.S.) requires 30 credit hours, of which 18 must be graded, a written thesis and at least one semester of laboratory teaching experience. The Master of Microbial Biotechnology (M.M.B.; http://harvest.cals.ncsu.edu/master-of-microbial-biotechnology/mmb/) degree requires 40 credit hours and four semesters involvement in an Industry Case Studies course, as well as a summer industry internship. This program also can be combined with a Master of Business Administration (M.B.A.) offered through the College of Management. The Master of Microbiology (M.M.) requires 30 credit hours, of which 18 must be graded, but has no requirement for a written thesis or laboratory instruction).

Doctoral Degree Requirements: The Ph.D. program (http://harvest.cals.ncsu.edu/microbiology/) is designed for individuals desiring to pursue careers in research and/or teaching. Prospective Ph.D. and M.S. students should become aware of departmental research programs and faculty so that an area of specialization is indicated in the application materials (personal statement). A faculty dissertation advisor and laboratory research program are confirmed at admission or by the end of the first semester. In conjunction with the advisor, the student establishes a four-member faculty advisory committee to guide the research and academic program. At least one semester of teaching assistance / experience is required. A preliminary examination is held soon after completing the second year of study, and the final examination includes a seminar presented by the candidate that is open to the university community.

Student Financial Support: All Ph.D. and M.S. applications to the Microbiology Graduate Program are considered for available assistantships. For highly qualified students, supplemental funds are frequently available. There is limited funding available for international students given the structure of the NC State University Graduate Student Support Plan.

Click on **Graduate Courses** for current course information.

Natural Resources

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Natural Resources				Y		Y		

GRADUATE FACULTY

Directors of Graduate Programs:

E. H. Bressler, Box 7701, 919/515-5333, gene bressler@ncsu.edu, Landscape Architecture

T. H. Shear, Box 8008, 919/515-7794, ted shear@ncsu.edu, Forestry and Environmental Resources

T. J. Smyth, Box 7620, 919/515-2838, jot smyth@ncsu.edu, Crop and Soil Sciences

Y. Leung, Box 7106, 919/513-3489, leung@ncsu.edu, Parks, Recreation and Tourism Management

Named Professors: R. C. Abt; Named Distinguished Professors: M. J. Vepraskas; Professors: A. Amoozegar, J. N. Bocarro, F. W. Cubbage, M. F. Floyd, D. J. Frederick, B. Goldfarb, J. L. Havlin, G. R. Hess, F. Isik, S. Khorram, Y. Leung, R. K. Meentemeyer, S. C. Nelson, E. G. Nichols, M. N. Peterson, J. P. Roise, R. M. Scheller, C. D. Siderelis, E. O. Sills, T. J. Smyth; Adjunct Professors: T. A. Steelman, J. M. Vose; Emeritus Professors: K. A. Henderson, H. J. Kleiss, M. G. Wagger, W. E. Winner; Associate Professors: C. E. Barbieri, G. B. Blank, K. M. Boone, G. L. Brothers, J. A. Delborne, M. B. Edwards, R. E. Emanuel, A. A. Fox, C. Galik, D. W. Hazel, M. V. Katti, F. H. Magallanes, D. B. Morais, E. L. Seekamp, T. H. Shear, C. G. Vick; Emeritus Associate Professors: R. L. Moore, S. T. Warren; Assistant Professors: M. L. Ardon Sayao, R. L. Cook, B. B. Cutts, J. A. Forrester, J. M. Gray, L. R. Larson, Z. H. Leggett, K. Martin, L. Rivers, K. T. Stevenson; Adjunct Assistant Professors: M. Addor, J. W. Smith; Extension Professors: M. A. Megalos; Teaching Assistant Professors: L. G. Tateosian

The natural resources program is an interdepartmental program designed to prepare students for positions in both private and public natural resource organizations. A selection of technical options couple core courses in natural resources issues and management with a series of related courses in a variety of related technical disciplines. The purpose of the natural resources core curriculum is to educate professionals at a Master's level who are well-versed in policy and regulation and who have skills in quantitative assessments. Currently approved technical options include: assessment and analysis, ecological restoration, economics and management, policy and administration, international resources, hydrology, and geographic information systems in the Department of Forestry and Environmental Resources; outdoor recreation management in the Department of Parks, Recreation and Tourism Management; and landscape architecture in the Department of Landscape Architecture. Each option is available as either the M.S. in NR or as the non-thesis Master of NR.

Admissions Requirements: Students should have an undergraduate degree in natural resources or a related field. Experience in natural resources management and administration will be considered in lieu of an appropriate undergraduate degree. Admission is contingent upon meeting departmental requirements and acceptance by an advisor.

Master's Requirements: The M.S. degree requires a research thesis based on completion of a research project. The Master of NR degree requires a practical project which develops and demonstrates problem-solving skills. Students enrolled in the Department of Forestry and Environmental Resources must take FOR 603 in the first or second semester. The minimum number of credit hours varies by technical option, but is generally 36 credit hours including research or project credits and core courses.

Core Courses (10 credit hours)

NR 500 Natural Resource Management NR 571 Current Issues in Natural Resource Policy ST 5** Graduate-level statistics course Departmental seminar

Click on **Graduate Courses** for current course information.

Nuclear Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Nuclear Engineering	Y			Y		Y		

GRADUATE FACULTY

K. N. Ivanov, *Department Head*

Directors of Graduate Programs:

K. L. Murty, Box 7909, 919/515-3657, murty@ncsu.edu, Nuclear Engineering

S. C. Shannon, Box 7909, scshanno@ncsu.edu, Nuclear Engineering

Distinguished Professors: Y. Y. Azmy, D. Kropaczek; Distinguished University Professors: J. G. Gilligan; Professors: B. Bhattacharyya, M. A. Bourham, N. T. Dinh, J. M. Doster, R. P. Gardner, A. Gupta, T. Hassan, A. I. Hawari, K. N. Ivanov, K. L. Murty, P. J. Turinsky; Research Professors: B. W. Wehring; Adjunct Professors: S. M. Bragg-Sitton, R. R. Pemper, G. Tryggvason, R. W. Youngblood; Emeritus Professors: D. J. Dudziak, V. C. Matzen, K. Verghese; Associate Professors: D. Y. Anistratov, M. N. Avramova, I. A. Bolotnov, J. Eapen, R. B. Hayes, D. Kaoumi, J. K. Mattingly, S. C. Shannon; Adjunct Associate Professors: E. M. Brubaker, P. A. Hausladen, M. F. Simpson, M. H. Stokely; Assistant Professors: K. Stapelmann, G. Yang; Research Assistant Professors: J. Hou; Adjunct Assistant Professors: S. P. Palmtag

The discipline of nuclear engineering is concerned with the development of nuclear processes for energy production and with the applications of radiation for the benefit of society. Representative topics of investigation include analytical, computational and experimental research in the neutronics, materials, thermal-hydraulics and control aspects of fission reactors; radiation detection and measurement of basic physics parameters; nuclear safety and security; applications of radioisotopes and radiation in industry, medicine and science; and plasma science, plasma engineering and design aspects of fusion reactors.

Admission Requirements: Bachelor's degree graduates in any of the fields of engineering or physical sciences may be qualified for successful advanced study in nuclear engineering. Prior experience or course work in nuclear physics, partial differential equations and basic reactor analysis is helpful but may be gained during the first year of graduate study. GRE scores (general test) are needed for on-campus graduate study.

Master's Degree Requirements: A total of 30 credit hours (at least nine semester hours of interdisciplinary breadth and 21 Nuclear Engineering) is required for both the M.S. and MNE degrees. An engineering project is required for the MNE degree and a formal thesis is required for the M.S. degree.

Doctoral Degree Requirements: A total of 72 credit hours which includes a minor (at least 12 hours) is required. Students must pass a departmental qualifying exam in three core areas of nuclear engineering, and they can (if they so choose and if their advisor approves) prepare for the exam by enrolling during their first year in three corresponding graduate courses comprising radiation fundamentals, reactor engineering, and radiation detection. Students who already earned a masters degree may count some of their credits towards the required PhD hours; consult <grad manual posted online> for details.

Student Financial Support: Teaching assistantships, research assistantships, and fellowships are available for qualified applicants. Opportunities are also available for graduate traineeships with utility companies, reactor and fuel vendors, and national laboratories providing a valuable combination of financial support and learning in the classroom, the research laboratory and on the job.

Other Relevant Information: The department has many excellent facilities including the one-megawatt PULSTAR fission reactor (soon to be uprated to 2MW), ultra cold neutron source, intense low-energy positron source, neutron scattering facility, neutron radiography unit, neutron activation analysis laboratory, nuclear materials laboratory, plasma laboratories, instrumentation and controls equipment, radiation analyzers and tomography systems, Generic PWR simulator and access to extensive computer facilities ranging from workstations to a supercomputer.

Click on **Graduate Courses** for current course information.

Nutrition

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Nutrition	Y			Y		Y		

GRADUATE FACULTY

Directors of Graduate Programs:

J. C. Allen, Box 7624, 919/513-2257, jon_allen@ncsu.edu, Food, Bioprocessing, and Nutrition Sciences L. S. Goodell, Box 7624, <u>lsgoodel@ncsu.edu</u>, Food, Bioprocessing, and Nutrition Sciences

Named Distinguished Professors: J. T. Brake, P. R. Ferket, J. Odle; Distinguished Professors: M. Lila; Professors: J. C. Allen, K. E. Anderson, S. L. Ash, C. Dunn, J. Eisemann, V. Fellner, M. G. Ferruzzi, J. L. Grimes, S. Kathariou, S. W. Kim, J. A. Knopp, J. A. Moore, P. E. Mozdziak, E. O. Oviedo-Rondon, M. H. Poore, P. D. Siciliano, R. C. Smart, E. VanHeugten; USDA Professors: V. D. Truong; Adjunct Professors: E. A. Koutsos; Emeritus Professors: B. P. Alston-Mills, L. W. Aurand, L. C. Boyd, L. S. Bull, E. V. Caruolo, G. L. Catignani, W. J. Croom, J. D. Garlich, W. M. Hagler, R. W. Harvey, W. L. Johnson, J. R. Jones, C. J. Lackey, J. Luginbuhl, J. W. McClelland, S. J. Schwartz, J. C. Shih, L. W. Whitlow; Emeritus Distinguished Professors: H. E. Swaisgood; Associate Professors: L. S. Goodell, G. K. Harris, C. D. Kay, M. D. Koci, S. Komarnytsky, C. Maltecca, S. E. Phillips; Adjunct Associate Professors: R. J. Harrell, C. R. Stark, O. T. Toomer; Assistant Professors: O. T. Toomer; Adjunct Assistant Professors: S. Sang; Teaching Associate Professors: C. V. Jordan; Teaching Assistant Professors: K. D. Ange-Van Heugten

The Interdepartmental Nutrition Program consists of faculty from multiple departments, including: Animal Science; Agricultural and Human Sciences; Food, Bioprocessing, and Nutrition Sciences; and the Prestage Department of Poultry Science. Students reside and conduct research in one of these departments under the direction of an appropriate advisor. Research in the nutrition program may be conducted with a variety of species and at various levels, such as molecular, cell, whole animal, and human communities. Research programs are primarily in the area of nutritional biochemistry, experimental animal nutrition (e.g. horses, ruminants, swine, poultry, rodents, and other species), or community nutrition and public health. Graduates find employment in academia, government, industry, and non-profit organizations, or continue their education in medical and allied health fields.

Admission Requirement: To be considered for admission, a student should have a B.S. or M.S degree, preferably in a science-related area. Additionally, applicants must have course work in biology and organic chemistry to be considered for admission. Students for M.S. or Ph.D. should contact and be recommended by a prospective major faculty advisor in their area of interest prior to final admission. Applicants to the Master of Nutrition should indicate their preferences for: on-campus or Distance Education delivery; an emphasis in animal, poultry, or food science (human) nutrition; core science or Professional Science Masters (PSM); and within the PSM, Feed Science or Human Nutrition.

Master's Degree Requirements: A minimum of 30 course credit hours, including a thesis is required for M.S., 36 for Master of Nutrition. The Master of Nutrition has options for all course delivery by Distance Education, with emphases in Feed Science or Human Nutrition, and an option for course work that qualifies as a Professional Science Master's degree.

Doctoral Degree Requirements: A minimum of 72 credit hours, including a dissertation for Ph.D. Students must complete core courses, including: Energy Metabolism, Protein and Amino Acid Metabolism, Vitamin Metabolism, and Mineral Metabolism.

Student Financial Support: Assistantships and fellowships may be available for M.S. and Ph.D. students on a competitive basis from the departments in which the advisor resides. Admission does not guarantee availability of

financial support.

Click on **Graduate Courses** for current course information.

Operations Research

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Operations Research	Y			Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

M. G. Kay, Box 7906, 919/515-2008, kay@ncsu.edu, Industrial Engineering

Named Professors: S. Fang, C. T. Kelley, R. E. King; Named Distinguished Professors: H. S. Heese, R. Uzsoy, Z. Zeng; Named Distinguished University Professors: R. B. Handfield, T. J. Hodgson, M. Rappa; Distinguished Professors: J. L. Swann, M. A. Vouk; Named Distinguished Professor: M. Liu; Professors: J. W. Baugh, B. Bhattacharyya, E. D. Brill, S. L. Campbell, Y. Fathi, R. E. Hartwig, P. L. Hersh, I. Ipsen, K. Ito, J. S. Ivy, J. A. Joines, Z. Li, G. F. List, L. A. Martin, M. E. Mayorga, N. G. Medhin, A. Nilsson, H. G. Perros, S. Ranjithan, J. P. Roise, G. Rouskas, N. F. Samatova, C. D. Savage, M. P. Singh, R. C. Smith, M. F. Stallmann, W. J. Stewart, H. T. Tran, I. Viniotis, W. Wang, J. R. Wilson, F. Wu, D. V. Zenkov; Research Professors: B. L. Edge, D. L. Lubkeman; Adjunct Professors: J. T. Betts, M. Devetsikiotis, S. M. Hsiang; Emeritus Named Professors: S. D. Roberts, M. W. Suh; Emeritus Professors: R. H. Bernhard, J. W. Bishir, P. Bloomfield, J. C. Dunn, H. J. Gold, D. M. Holthausen, D. F. McAllister, C. Meyer, K. H. Pollock, J. R. Stone, R. E. Young; Associate Professors: K. A. Barletta, R. Y. Chirkova, J. F. DeCarolis, S. Ghoshal, M. J. Kang, M. G. Kay, E. Kemahlioglu-Ziya, Y. Liu, N. Lu, T. Pang, T. W. Reiland, C. E. Smith, D. P. Warsing; Research Associate Professors: J. Taheri; Adjunct Associate Professors: B. Denton, T. Yu; Emeritus Associate Professors: A. R. de Queiroz; Teaching Professors: H. L. Nuttle

Operations Research (OR) is a graduate program of an interdisciplinary nature, governed by an administrative board and the program committee, and administered through the office of the program director.

Admission Requirements: Applications are accepted from undergraduate majors in all technical disciplines. Applicants should have had at least four math courses beyond calculus (e.g., courses in differential equations, linear algebra, probability and statistics, and mathematical analysis). Knowledge of a computer programming language is recommended, but not required. GRE scores are required of all new applicants.

Master's Degree Requirements: The Master of Operations Research degree is a terminal graduate degree for students who seek careers as OR practitioners in either the private or public sector. The M.S. degree is designed to prepare students for careers in research and development.

Doctoral Degree Requirements: The Ph.D. degree is intended for students to be research scientists in industry or teachers and researchers in academia. This degree requires a minimum of 72 hours of graduate credit beyond the bachelor's degree, including coursework in major and minor areas of concentration together with credit for doctoral research and dissertation preparation. A departmental written qualifying examination is required. For students who have completed a Master's degree from another institution prior to joining the Ph.D. program, a minimum of 54 hours of additional graduate credit are required. Please consult the <u>Operations Research website</u> for more details of degree requirements.

Student Financial Support: Both teaching and research assistantships are available to qualified applicants. Award priority is given to Ph.D. then M.S. applicants. Outstanding students who are U.S. citizens and who shall be enrolled in the NC State Graduate School for the first time are eligible for the Engineering Dean's Graduate Fellowship Program.

Click on **Graduate Courses** for current course information.



Parks, Recreation and Tourism Management

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Parks, Recreation, and Tourism Management	Y			Y		Y		

GRADUATE FACULTY

M. F. Floyd, *Department Head*

Director of Graduate Programs:

Y. Leung, Box 7106, 919/513-3489, leung@ncsu.edu, Parks, Recreation and Tourism Management

Professors: J. N. Bocarro, M. F. Floyd, M. A. Kanters, Y. Leung, R. K. Meentemeyer, M. N. Peterson, C. D. Siderelis; Adjunct Professors: T. A. Steelman; Emeritus Professors: H. A. Devine, K. A. Henderson; Associate Professors: A. Attarian, C. E. Barbieri, G. L. Brothers, J. M. Casper, M. B. Edwards, J. A. Hipp, D. B. Morais, E. L. Seekamp, C. G. Vick; Emeritus Associate Professors: L. D. Gustke, R. L. Moore; Assistant Professors: K. S. Bunds, B. B. Cutts, W. G. Knollenberg, L. R. Larson, K. Lee, K. T. Stevenson, J. Vukomanovic; Adjunct Assistant Professors: S. A. Rich, J. W. Smith; Teaching Associate Professors: K. A. Bush, E. K. Lindsay; Teaching Assistant Professors: L. G. Tateosian, R. W. Wade

The Doctoral degree allows students to match their particular research interests and career aspirations with departmental research activities and faculty expertise. The primary areas of interest for students include health and well-being, human dimensions of the natural and built environment, sustainable and equitable tourism, and geospatial methods and modelling with a substantive area of study in another discipline.

The Master's degree provides students the opportunity to develop and enhance their critical understanding of both the conceptual foundations of parks, recreation and tourism management and the procedures of systematic inquiry and critical problem solving as applied to planning and management issues. The department offers educational opportunities and resources for the preparation of professionals concerned with planning, organizing, managing and directing parks, recreation, sport, and tourism programs, areas, and facilities. Several Master's Degree options are available: MS in Parks, Recreation and Tourism Management, MS in Natural Resources-Outdoor Recreation Technical Option, Master of Natural Resources (MNR)-Outdoor Recreation Technical Option (non-thesis), and Online Professional Master of Parks, Recreation, Tourism and Sport Management (MPRTSM) (non-thesis). The Department also administers the Graduate Certificate in Sport and Entertainment Venue Management.

The general emphasis areas at the Master's level include: parks and recreation management, tourism development and management, geographic information systems, recreational sport management, and natural resource recreation management. The MS-NR and MNR (Outdoor Recreation Technical Option) develops the knowledge and skills needed for planning and managing natural resource-based outdoor recreation opportunities and resources. The online MPRTSM degree provides students with a solid professional and business education designed to advance their career development in parks, recreation, tourism, and sport industries. The online degree program operates on a cohort model and admits students in fall and spring semester.

Doctoral Degree Requirements: Although each doctoral course of study will be unique to the individual student, the usual course of study will include a minimum of 54 hours beyond the Master's. These credit hours are distributed among the core courses, statistics and research methods, a minor or substantive area consisting of 15 hours of course work approved by the student's faculty advisor, and the dissertation. Students are expected to have completed a Master's degree, preferably one with a thesis. Students without research experience will have to demonstrate an ability to produce scholarly work in PRTM.

Master's Degree Requirements: Each Master's Degree has <u>specific requirements</u>. The minimum credit hours range from 30 for MS in PRTM Degree, to 34 for MNR-Outdoor Recreation Technical Option Degree. Doctoral and M.S. application deadline is February 15 for both U.S. and international students. Online Degree-MPRTSM application deadline is May 15.

Student Financial Support: Graduate assistantships and internships are available to students in this program on a competitive basis.

Click on **Graduate Courses** for current course information.

Physics

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
<u>Physics</u>	Y			Y				

GRADUATE FACULTY

P. R. Huffman, *Department Head*

Director of Graduate Programs:

D. E. Aspnes, Box 8202, 919/515-4261, aspnes@ncsu.edu, Physics

Named Professors: J. Bernholc; Named Distinguished Professors: D. W. Brenner, Z. Sitar; Distinguished Professors: F. So; Distinguished University Professors: D. E. Aspnes; Professors: H. Ade, R. J. Beichner, J. M. Blondin, J. D. Brown, M. T. Chu, L. I. Clarke, K. E. Daniels, W. L. Ditto, M. J. Escuti, R. E. Fornes, R. Golub, D. G. Haase, H. D. Hallen, P. R. Huffman, C. R. Ji, K. W. Kim, R. M. Kolbas, H. Krim, J. Krim, G. C. McLaughlin, L. Mitas, J. F. Muth, R. J. Nemanich, M. Paesler, M. Pasquinelli, S. P. Reynolds, R. Riehn, C. M. Roland, M. C. Sagui, T. M. Schaefer, J. E. Thomas, K. R. Weninger, Y. G. Yingling, A. R. Young; Research Professors: K. Borkowski, C. R. Philbrick, J. E. Rowe, B. A. Sherwood, J. W. York; Adjunct Professors: U. Agvaanluvsan, M. Buongiorno-Nardelli, J. L. Hubisz, D. J. Lee, P. J. Reynolds, J. Schwartz; Emeritus Professors: R. W. Chabay, K. T. Chung, J. W. Cook, S. Cotanch, W. R. Davis, D. C. Ellison, R. E. Fornes, G. L. Hall, K. L. Johnston, G. H. Katzin, F. Lado, G. E. Mitchell, R. R. Patty, P. J. Stiles, D. R. Tilley; Emeritus Distinguished Professors: G. Lucovsky; Associate Professors: L. Cao, D. B. Dougherty, C. Frohlich, K. Gundogdu, D. L. Irving, J. P. Kneller, M. Unsal, H. Wang; Research Associate Professors: J. H. Kelley, W. Lu; Adjunct Associate Professors: P. E. Garrett, D. Lazzati; Emeritus Associate Professors: G. C. Cobb, G. W. Parker; Assistant Professors: M. W. Elting, M. P. Green, F. L. Hunte, A. Kemper, D. P. Kumah, S. Lim, R. L. Longland, D. Sun; Research Assistant Professors: J. R. Bochinski, A. G. Dinku; Adjunct Assistant Professors: B. R. Conrad; Teaching Professors: B. I. Fortner

Research opportunities in theoretical/computational physics are available in astrophysics, biomolecular simulations, chaos, condensed matter, nanoscience/nanomaterials, nuclear/particle physics, and relativity. Research opportunities in experimental physics are available in astronomy, atomic and molecular physics, biophysics, emergent phenomena, materials physics, nanoscale science, nonlinear systems, nuclear and particle physics, optics, soft-condensed-matter physics and technology, Surface Physics, and synchrotron radiation research.

Admission Requirements: Bachelor's degree in physics or equivalent and related. General GRE and the GRE Physics subject test are recommended for many candidates, but not required.

Master's Degree Requirements: A minimum of 30 credit hours beyond the Bachelor's degree; demonstrated mastery of aspects of the physics curriculum. Thesis and non-thesis options.

Doctoral Degree Requirements: Seventy-two (72) credit hours beyond the Bachelor's degree; demonstrated mastery of core physics curriculum:

PY721, PY782, PY783 and PY785; pass an oral preliminary exam, prepare a dissertation, and an oral final defense.

Student Financial Support: Graduate teaching assistantships are available for new and continuing students. Research assistantships are available to continuing students and occasionally to new students. More than 95% of students are supported by assistantships.

Click on **Graduate Courses** for current course information.

Physiology

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Physiology				Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

P. E. Mozdziak, Box 7608, 919/515-5544, paul mozdziak@ncsu.edu, Poultry Science

Named Professors: W. L. Flowers, H. B. Patisaul; Named Distinguished Professors: J. T. Brake, J. Odle, R. Roe; Professors: G. W. Almond, K. E. Anderson, C. M. Ashwell, B. L. Black, A. T. Blikslager, R. J. Borski, T. T. Brown, P. A. Curtis, D. C. Dorman, F. W. Edens, K. L. Esbenshade, C. E. Farin, J. E. Gadsby, J. L. Gookin, S. L. Jones, S. W. Kim, H. Liu, K. M. Meurs, P. E. Mozdziak, J. N. Petitte, R. M. Petters, P. D. Siciliano, G. W. Smith; Adjunct Professors: J. B. Golden, E. A. Koutsos, D. W. Threadgill; Emeritus Professors: W. J. Croom, R. M. Grossfeld, H. F. Heatwole, T. E. Levere, J. F. Roberts, M. C. Roberts, T. D. Siopes, H. A. Underwood, S. P. Washburn, T. G. Wolcott; Associate Professors: L. B. Borst, B. A. Breuhaus, J. M. Bruno-Barcena, T. Ghashghaei, M. D. Koci, C. Maltecca, M. Niedzlek-Feaver, S. E. Phillips, M. Rodriguez-Puebla, J. A. Yoder; Research Associate Professors: H. Gracz; Adjunct Associate Professors: A. J. Moeser; Emeritus Associate Professors: M. D. Whitacre; Assistant Professors: E. B. Bohorquez

The Physiology Graduate Program is an interdisciplinary and interdepartmental program comprising faculty drawn from across the University. An advanced degree in Physiology is highly valued by the scientific community and can lead to careers in research and teaching in academia, industry and government laboratories, public policy and consulting. Research is carried out using a variety of model organisms, laboratory and companion and agriculturally important species.

Admission Requirements: Students entering the graduate program in Physiology should have a Bachelor's degree in a related biological or physical science. Undergraduate courses should include Physiology, Biochemistry, Organic Chemistry, Calculus, and Physics. Each application package will be screened by the Admissions Committee. Factors considered for admission include: grade point average (3.0 is required for regular admission), GRE scores, undergraduate courses, letters of recommendation, and the willingness of a member of the Graduate Physiology faculty to serve as the applicant's advisor.

Master's Degree Requirements: All Master's students are required to complete PHY 503, PHY 504, BCH 553, and a one-credit hour course in research ethics. *Master of Science Degree:* For a Master of Science degree a minimum of 30 semester hours of graduate work in the degree program is required including a minimum of 20 hours of course work at the 500-800 level. On average, the M.S. degree takes two to three years to complete. *Master of Physiology Degree:* The non-thesis Master's degree (Master of Physiology) requires a total of 36 credits. The median time to degree completion is 1.75 years or less.

Student Financial Support: Financial assistance for qualified students in the form of research assistantships, fellowships and traineeships is available through participating departments only and not through the Physiology program for thesis-based students only.

Other Relevant Information: Graduate students enrolled as Physiology majors are housed in the department of their major professor and may participate in departmental activities.

Click on **Graduate Courses** for current course information.

Recommended Courses Normally Included in Programs of Study for the M.S. and Ph.D. Degrees and the Non-Thesis MOP Program: Other recommended/supporting courses are available through many departments, e.g. Animal Science, Biochemistry, Biomathematics, Biotechnology, Cell Biology, Comparative Biomedical Sciences, Entomology, Genetics, Immunology, Microbiology, Nutrition, Pharmacology, Poultry Science, Psychology, Statistics, Toxicology, and Zoology, and may be included for consideration in the plan of work.

Plant Biology

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Botany	Y			Y		Y		
Plant Biology	Y			Y		Y		

GRADUATE FACULTY

R. G. Franks, Department Head

Director of Graduate Programs:

R. L. Blanton, Box 7612, 919/513-2181, <u>larry blanton@ncsu.edu</u>, Plant and Microbial Biology

Named Professors: J. M. Alonso, R. E. Dewey, A. M. Grunden, J. B. Ristaino, T. W. Rufty; Named Distinguished Professors: R. S. Boston, J. M. Burkholder, M. E. Daub, L. K. Hanley-Bowdoin; Distinguished University Professors: W. F. Thompson; Professors: R. L. Blanton, R. G. Franks, C. H. Haigler, W. A. Hoffmann, S. Hu, J. E. Mickle, R. Qu, H. A. Sederoff, T. R. Wentworth, R. W. Whetten, Q. Xiang, D. Xie; Research Professors: I. Y. Perera; USDA Professors: K. O. Burkey; Adjunct Professors: C. S. Brown; Emeritus Named Professors: W. F. Boss; Emeritus Professors: N. S. Allen, U. Blum, E. Davies, R. C. Fites, J. W. Hardin, J. M. Stucky, J. F. Thomas, C. G. VanDyke, E. A. Wheeler; Associate Professors: S. B. Carson, S. Komarnytsky, A. Krings, X. Li, T. A. Long, M. Pierce; Emeritus USDA Professors: W. W. Heck; Emeritus Associate Professors: H. V. Amerson; Assistant Professors: C. J. Doherty, T. Hsieh, S. N. Sheth, R. Sozzani, A. N. Stepanova; Research Assistant Professors: C. H. Saravitz; Teaching Associate Professors: C. V. Jordan; Teaching Assistant Professors: J. M. De Gezelle

Course offerings or research facilities are available in the following areas: plant cell biology, cellular imaging, cellulose biology, cellular signaling, plant development, plant hormones, epigenetics, plant systems biology, plant genetic engineering, transgene regulation and silencing, stress biology, chemical genomics, plant gravitational genomics, phytochemistry, metabolic engineering, plant-microbe interactions, aquatic ecology, toxic dinoflagellates, endangered species, plant community ecology, physiological ecology, tropical ecology, evolutionary ecology, paleobotany, plant systematics, evolution of flowering plants, and ethnobotany.

Admission Requirements: Students entering the graduate program in plant biology should have a bachelor's degree in plant biology or a related undergraduate program that includes biological, physical and mathematical science training including undergraduate courses in organic chemistry, calculus and genetics, as well as biology. All applications are screened by a departmental committee, and the best qualified applicants will be accepted until all available spaces are filled.

Master's and Doctoral Degree Requirements: The M.S. requires a total of 30 credit hours (20 of the 30 credit hours must be from 500-, 600-, 700/800-level courses; 18 credit hours must be letter graded); the Master of Plant Biology requires a total of 36 credit hours. The Ph.D. requires a total of 72 credit hours. Two core courses (Functional Plant Biology and either Plant Functional Ecology or Systematic Botany) are required. Other requirements include: a Plant Biology Colloquium, Plant Anatomy, an additional plant biology course, a graduate statistics course, a graduate ethics course, a thesis (for the Ph.D. and M.S., but not the Master of Plant Biology), a comprehensive examination (Ph.D.), oral thesis defense and a one-semester teaching responsibility per degree. Students must maintain a "B" average in all course work.

Other Relevant Information: Graduate research and teaching assistantships and tuition remission information are available from the department. New students supported by departmental research/teaching assistantships may elect to rotate through three laboratories during their first semester. At the end of the semester, they will choose a laboratory for

their research activities consistent with their interests and available research projects. Provisions are available for cooperative research in more than one laboratory. Graduate students are expected to attend and participate in the seminar program every semester they are in residence. The department participates in training grants in biotechnology.

Click on **Graduate Courses** for current course information.

Poultry Science

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Poultry Science				Y		Y		

GRADUATE FACULTY

P. A. Curtis, *Department Head*

Director of Graduate Programs:

J. L. Grimes, Box 7608, 919/515-5406, jesse grimes@ncsu.edu, Poultry Science

Named Distinguished Professors: J. T. Brake, P. R. Ferket; Professors: K. E. Anderson, C. M. Ashwell, D. K. Carver, P. A. Curtis, F. W. Edens, J. L. Grimes, H. M. Hassan, P. E. Mozdziak, E. O. Oviedo-Rondon, J. N. Petitte, D. P. Wages; Adjunct Professors: M. Choct, J. B. Golden, J. K. Northcutt, W. B. Roush, S. M. Shane, Z. Uni; Emeritus Professors: T. A. Carter, V. L. Christensen, W. J. Croom, J. D. Garlich, W. M. Hagler, G. B. Havenstein, C. R. Parkhurst, B. W. Sheldon, J. C. Shih, T. D. Siopes, C. M. Williams; Associate Professors: R. B. Beckstead, M. T. Knauer, M. D. Koci; Adjunct Associate Professors: C. R. Stark, O. T. Toomer; Assistant Professors: A. C. Fahrenholz, K. A. Livingston; USDA Assistant Professors: O. T. Toomer; Adjunct Assistant Professors: D. S. Casey, Y. O. Fasina, J. V. Felts, A. G. Gernat, C. L. Heggen-Peay, R. O. Maguire, T. F. Middleton, M. H. Schwartz, C. J. Williams

Course offerings and research programs are comprehensive in the areas of physiology, nutrition, microbiology, molecular biology, biotechnology, food science, immunology, genetics, pathology, and toxicology. The demand for men and women with advanced training in poultry science is far greater than the supply. Opportunities exist for graduates in research and teaching in universities, government, and private industry.

Admission Requirements: Factors considered for admission include grade point average, strength of prior academic program, experience, letters of recommendation, and special skills or interests. GRE scores are required.

Master's Degree Requirements: While there are no specific course requirements for the master's degree in Poultry Science, most programs exceed the minimum 30 credit hours.

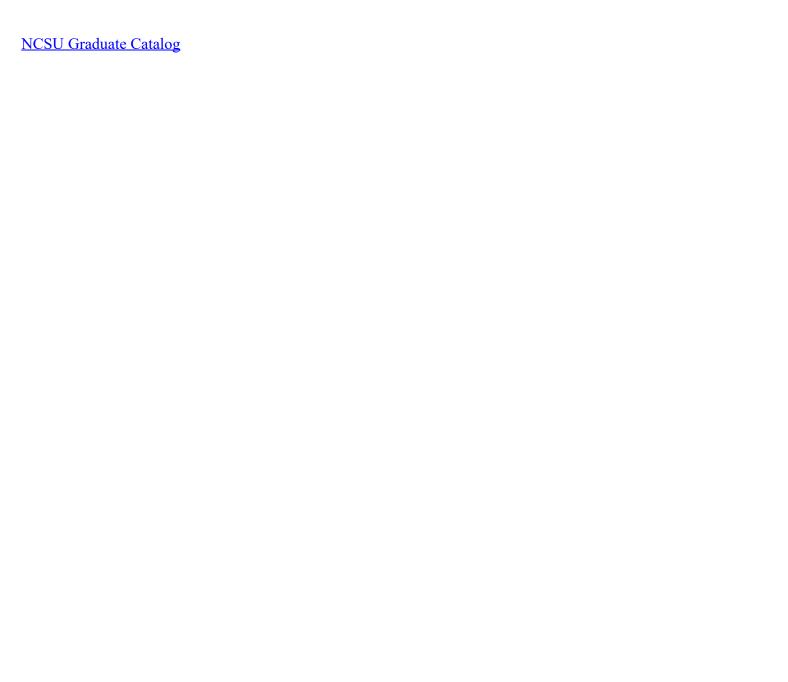
Doctoral Degree Requirements: See <u>Animal Science and Poultry Science</u>.

Student Financial Support: Both research and teaching assistantships are available on a competitive basis within the department. General requirements for these assistantships are as described in the Graduate Catalog. Other financial support may be available in the form of graduate stipend supplementation, research grant support, or out-of-state tuition waivers in accordance with the University's Graduate Student Support Plan.

Other Relevant Information: The Department of Poultry Science occupies modern facilities in Scott Hall, a three-story building on the main campus adjacent to the D.H. Hill Library. The department consists of about 20 faculty, approximately 40 support staff, 25 graduate students and postdoctoral associates, and 100 undergraduate students.

For more information, visit the **Department of Poultry Science** website.

Click on **Graduate Courses** for current course information.



Psychology

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Psychology	Y			Y				

GRADUATE FACULTY

C. B. Mayhorn, *Department Head*

Director of Graduate Programs:

M. B. Wyer, Box 7650, mary wyer@ncsu.edu, Psychology

Professors: R. Azevedo, L. E. Baker-Ward, J. P. Braden, L. L. Foster, D. J. Gillan, D. O. Gray, A. g. Halberstadt, M. E. Haskett, T. M. Hess, D. B. Kaber, C. B. Mayhorn, A. W. Meade, R. W. Nacoste, K. E. Stewart, E. N. Wiebe; Clinical Professors: N. S. Murr; Adjunct Professors: A. D. Hall, W. M. Wechsberg; Emeritus Professors: J. W. Cunningham, K. B. DeBord, D. W. Drewes, W. P. Erchul, D. O. Gray, J. W. Kalat, T. E. Levere, J. E. Luginbuhl, D. W. Martin, D. H. Mershon, J. J. Michael, A. C. Schulte, M. S. Wogalter; Associate Professors: J. C. Allaire, J. C. Begeny, C. C. Brookins, J. L. Burnette, S. B. Craig, S. L. Desmarais, D. Gruehn, A. C. McLaughlin, B. S. Mehlenbacher, C. S. Nam, S. D. Neupert, S. B. Pond, S. A. Stage, M. A. Wilson, M. B. Wyer; Adjunct Associate Professors: J. W. Fleenor; Emeritus Associate Professors: R. E. Mitchell; Assistant Professors: S. Cho, J. Feng, E. Hope, E. Kim, K. S. Mulvey, K. Norwalk, L. M. Widman; Teaching Assistant Professors: H. M. Njie, J. M. Simons-Rudolph

The Department of Psychology offers five courses of study (concentrations) leading to the Ph.D.: applied social and community psychology, human factors and applied cognition, industrial-organizational psychology, lifespan developmental psychology, and school psychology. An additional master's degree program is available for school psychology.

Admission Requirements: With the exception of the school psychology master's degree program, admitted students enter doctoral training programs. Applicants must be graduates of accredited institutions. Although a degree in psychology is not required, applicants must demonstrate that their academic backgrounds have prepared them for doctoral training in their specialty area. A strong academic record, competitive scores on the GRE (General Test) and three satisfactory letters of recommendation are required for admission. Research experience is important. Match of applicants' research interests with current faculty research is an important consideration. See https://psychology.chass.ncsu.edu/graduate/apply.php for additional information.

Master's Degree Requirements: The department offers the master's degree in school psychology; students in the other concentrations are admitted only to the doctoral program. Students completing the school psychology master's program are eligible for licensure as public school psychologists in North Carolina. The program requires a total of 60 credit hours, including two years of course work, a summer practicum program, and a full-time internship in the third year.

For students entering doctoral programs, the master's degree is awarded only in special circumstances, typically when a student in good standing chooses not to continue in the doctoral program.

Doctoral Degree Requirements: The graduate program for each doctoral student is determined in conjunction with the student's graduate advisory committee and tailored to the needs, interests, and accomplishments of the individual. Requirements vary across concentrations, but all doctoral plans of work include at least 72 credit hours. See https://psychology.chass.ncsu.edu/graduate/ for information about requirements for different concentrations.

Student Financial Support: Many graduate students receive financial support in the form of teaching or research assistantships. All admitted applicants are considered for assistantships.

Click on **Graduate Courses** for current course information.

Public Administration

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Public Administration	Y					Y		

GRADUATE FACULTY

Directors of Graduate Programs:

- B. L. Nowell, Box 8102, 517/377-0932, blnowell@ncsu.edu, Political Science
- B. McDonald, Box 8102, bmcdona@ncsu.edu, Political Science
- J. D. Coggburn, Box 8102, 919/515-1888, icoggburn@ncsu.edu, Political Science

Professors: T. A. Birkland, R. M. Clerkin, J. D. Coggburn, D. M. Daley, G. D. Garson, J. Kuzma, B. L. Nowell; Emeritus Professors: C. K. Coe; Associate Professors: R. M. Berry-James, J. R. Brunet, C. Galik, B. McDonald, J. E. Swiss; Emeritus Associate Professors: M. L. Vasu; Assistant Professors: J. A. Coupet, J. C. Diebold, R. J. Reardon, A. J. Stewart; Teaching Assistant Professors: T. A. Appling, D. L. Weisel

Public Administration students at NC State are prepared for a career in public service. They will develop the leadership tools and knowledge they need to serve, manage and lead public or nonprofit organizations or to conduct cutting-edge academic research.

Admission Requirements: A list of required application documents can be found on the <u>Public Administration page</u>. The deadline to apply to the MPA program is May 15 (March 1 for International applicants) for Fall admission and November 1 (March 1 for International applicants) for Spring admission. The deadline to apply to the Ph.D. program is March 15 (March 1 for International applicants) for Fall admission. Completed applications received by February 1 will receive consideration for all available university and department scholarships and assistantships.

Master's Degree Requirements: The MPA degree requires the completion of 40 graduate credit hours:

- 24 credit hours of core coursework
- 18 credit hours of elective coursework
- Students lacking the equivalent of one year of full-time public service experience must complete a 3 credit hour internship as part of their elective coursework.

Prerequisites for the program are an undergraduate course in microeconomics and an intermediate statistics (equivalent to ST 311) course. Students who do not have one or both of these prerequisite courses must successfully complete equivalent coursework prior to graduation. The MPA is an Option B Master's degree with a one-person committee and no final oral examination. Details on the degree requirements can be found on the Master of Public Administration page.

The MPA program offers elective coursework in public management, nonprofit management, urban management, financial management, organizational leadership, public policy and justice administration.

Doctoral Degree Requirements: The Ph.D. degree requires the completion of 72 graduate credit hours:

- 60 credit hours of coursework (18 hours of relevant graduate credit from a prior Master's degree may be used; total degree hours must include at least 36 hours at the doctoral level)
- 12 credit hours of dissertation research

Details on the degree requirements can be found on the **Ph.D.** in **Public Administration page**.

Each student will select or develop one or two fields of specialization.

Student Financial Support: A limited number of fellowships and graduate assistantships are offered by the

Department of Public Administration. Contact the Department for more information. Other forms of student aid are described in the financial aid section of the Graduate Catalog.

Other Relevant Information: The Department of Public Administration also offers Graduate Certificates in Public Policy and Nonprofit Management, either of which can be taken alone or in conjunction with a graduate degree.

Click on **Graduate Courses** for current course information.

Science, Technology, Engineering, and Mathematics Education

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Learning and Teaching in STEM	Y							

GRADUATE FACULTY

Directors of Graduate Programs:

K. F. Hollebrands, Box 7801, kfholleb@ncsu.edu, Science, Technology, Engineering, and Mathematics Education M. R. Blanchard, Box 7801, meg_blanchard@ncsu.edu, Science, Technology, Engineering, and Mathematics Education

Named Distinguished University Professors: J. Confrey; Professors: A. Clark, M. J. Fleener, K. F. Hollebrands, M. G. Jones, H. S. Lee, L. V. Stiff, K. C. Trundle, E. N. Wiebe; Associate Professors: M. R. Blanchard, S. J. Carrier, K. A. Keene, S. Park; Assistant Professors: C. Delgado, C. D. Denson; Adjunct Assistant Professors: P. P. Carpenter; Teaching Assistant Professors: T. B. Baldwin, C. P. Edgington, P. M. Shumaker Jeffrey, D. A. Williams

The Department of Science, Technology, Engineering and Mathematics (STEM) Education offers graduate programs that lead to the degrees of Doctor of Philosophy (PhD), Master of Science (MS), and Master of Education (MEd). We prepare educators and researchers for positions as teachers, leaders, and university faculty of the highest quality. We are particularly proud of our emphasis on the use of technology to enhance teaching. Students take courses in their educational specialty, in general professional education, and in academic discipline areas including: biological sciences, chemistry, computer science, earth science, engineering, graphic arts, interdisciplinary science, mathematics, physics, or statistics.

A master's program is offered that leads to initial teaching licensure. Master's programs are also offered leading to North Carolina M-licensure as a teacher of technology at grades 6-12. Programs are also available for those seeking advanced graduate-level certification as a teacher. Finally, students may choose a program to prepare for teaching careers in post-secondary education.

Doctoral students are knowledge-seekers and who are eager to pursue educational problems and develop critical thinking skills in a collaborative environment. The programs prepare individuals for positions in their fields of study related to:

- 1. scholarly inquiry and discourse in their discipline,
- 2. preparation of K-12 teachers,
- 3. instruction and development issues in K-16, and
- 4. leadership positions.

Admission Requirements: Applicants must submit a completed application specific to the program concentration. The three concentrations or program areas of study (PAS) are:

Science Education

Engineering and Technology Education

Mathematics and Statistics Education

Please see the <u>Learning and Teaching in STEM</u>, <u>PhD website</u> for details. The deadlines for submission of an application, and academic and professional background necessary for admission differ by specific program concentration.

Doctoral Degree Requirements: The Ph.D. program in Learning and Teaching in STEM requires a previous master's degree, a minimum of 50 semester hours of course work, and 9 semester hours of dissertation research beyond the Master's Degree requirements.

Student Financial Support: A small number of teaching and research assistantships are available, and out-of-state tuition remission may be available for one year for students on assistantships. Please discuss these opportunities directly with program area faculty.

Click on **Graduate Courses** for current course information.

Social Work

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Social Work						Y		

GRADUATE FACULTY

K. Bullock, Department Head

Director of Graduate Programs:

K. L. Stansbury, Box 7639, klstansb@ncsu.edu, Social Work

Professors: K. Bullock, J. T. Pennell; Associate Professors: N. R. Ames, W. J. Casstevens, K. L. Stansbury, J. Taliaferro, I. Yoon; Emeritus Clinical Associate Professors: L. R. Williams; Assistant Professors: Q. Cryer-Coupet, A. R. Ellis, J. K. Hall; Clinical Assistant Professors: B. A. Zelter; Teaching Assistant Professors: D. C. Fitzpatrick

The mission of the MSW program is to prepare students for practice that is sensitive to the social, economic, cultural, demographic and political contexts that shape our state and beyond. Within a framework emphasizing professional ethics, social justice, diversity, strengths and community engagement, the Department seeks to equip students for leadership roles and effective practice.

Admission Requirements (scroll down to see additional requirements for Advanced Standing applicants)

- Bachelor's degree (any major) from an accredited liberal arts college or university.
- GPA of 3.0 or higher for the last 60 hours of academic work. Students with a GPA less than 3.0 but greater than 2.5 for the last 60 hours of academic course work must have official Graduate Record Exam (GRE) or Miller Analogies Test (MAT) scores forwarded to the Graduate School.
- Liberal arts coursework in the social sciences, humanities, biology, and statistics.
 - Four courses in the social sciences (e.g. anthropology, economics, ethnic studies, political science, psychology, social work, sociology), with a grade of C or better.
 - Three courses in the humanities (e.g. comparative religions, history, linguistics, literature, modern or classic languages, philosophy and ethics, visual and performing arts), with a grade of C or better.
 - A biology and a statistics course, with a grade of C or better.
- A variety of life and work experience in human services, paid or volunteer. *Note: In accordance with the CSWE standards, students cannot receive academic credit based on life and work experience.*

Additional Requirements for Advanced Standing

In addition to the above admissions requirements, the following applies to Advanced Standing applicants:

- Applicants with a BSW degree from an accredited program and a GPA of at least 3.5 (on a 4.0 scale) for the last 60 credit hours of academic work are eligible to apply for Advanced Standing status. Students with a GPA less than 3.5 but greater than 2.5 for the last 60 hours of academic course work must have official Graduate Record Exam (GRE) or Miller Analogies Test (MAT) scores forwarded to the Graduate School.
- BSW students who graduate prior to the first semester of Advanced Standing coursework will be considered for admission.
- Applicants must have grades of "B" or better in all social work courses.
- One of three references must be from Field/Task Supervisor or Field Director/Liaison.

Master's Degree Requirements: The MSW Program provides two options: The Traditional 60-credit program, and the 39-credit Advanced Standing Program, which is designed for BSW graduates only.

We do not offer a part-time curriculum at this time.

Other Relevant Information: The MSW program is accredited by The Council on Social Work Education (CSWE).

Click on **Graduate Courses** for current course information.

Sociology

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Sociology	Y			Y				

GRADUATE FACULTY

Director of Graduate Programs:

S. J. McDonald, Box 8107, 919/515-9028, steve mcdonald@ncsu.edu, Sociology and Anthropology

Named Distinguished Professors: M. D. Schulman; Named Distinguished University Professors: W. A. Wolfram; Professors: M. P. Atkinson, T. N. Greenstein, E. L. Kick, P. L. McCall, S. J. McDonald, T. L. Parcel, A. H. Ross, M. L. Schwalbe, T. E. Shriver; Emeritus Named Professors: V. M. Aldige; Emeritus Professors: W. B. Clifford, E. M. Crawford, L. R. Dellafave, T. N. Hobgood, R. L. Moxley, R. D. Mustian, M. M. Sawhney, C. R. Tittle, E. M. Woodrum, M. A. Zahn, J. J. Zuiches; Emeritus Distinguished Professors: L. B. Otto; Associate Professors: S. K. Bowen, D. T. Case, M. L. Crowley, S. M. De Coster, K. L. Ebert, N. M. Haenn, S. B. Longo, A. Manzoni, W. R. Smith, M. E. Thomas, M. S. Thompson, J. M. Wallace; Adjunct Associate Professors: J. F. Thigpen, W. E. Wormsley; Emeritus Associate Professors: R. C. Brisson, R. F. Czaja, A. C. Davis, S. C. Lilley, R. J. Thomson, M. L. Walek; Assistant Professors: M. A. DeSoucey, A. D. Fernandes, C. A. Juarez, W. Liao, S. C. McManus, J. K. Millhauser; Adjunct Assistant Professors: B. L. Clark

The department offers Master's and doctoral programs in sociology designed to prepare students for academic, research, and applied careers. The programs are structured to provide an intellectually stimulating and academically rigorous, yet supportive, environment that emphasizes developing research skills through course work and close collaboration with faculty.

Admissions Requirements: In addition to general Graduate School requirements, applicants are required to provide a writing sample and should be intending to complete the Ph.D. degree in sociology. We routinely accept applications only for the fall semester. The completed application should be received no later than January 1 to ensure full consideration for assistantship support. Applications for spring admission are considered only under special circumstances (for example, when the student has already completed some graduate course work in sociology).

Master's Degree Requirements: Applicants should have received/be receiving a Bachelor's degree from an accredited institution with a major in sociology. Other majors are considered, but students may have to make up deficiencies without credit. The M.S. requires a thesis, whereas a Master of Sociology (M.SOC.) requires six semester credit hours of practicum (supervised field placement in an organization or agency) and a research paper. A minor for both degrees is optional. Thirty (30) hours of credit is required to obtain a Master's degree.

Doctoral Degree Requirements: The Ph.D. requires a total of 72 credit hours. The degree normally requires a Master's in sociology. Doctoral students take core courses in theory and methods/analysis and at least three courses each in two substantive areas of specialization. Up to 36 credit hours for course work at the master's level at NCSU may be counted towards that total. Up to 18 credit hours from course work at the master's level from another university may be counted towards the total of 72 credit hours. A minor is optional.

Student Financial Support: Teaching and research assistantships are available on a competitive basis.

Click on **Graduate Courses** for current course information.

Statistics

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
<u>Statistics</u>	Y			Y		Y		

GRADUATE FACULTY

L. A. Stefanski, *Department Head*

Directors of Graduate Programs:

J. B. Post, Box 8203, jbpost2@ncsu.edu, Statistics W. Lu, Box 8203, 919/515-1915, wlu4@ncsu.edu, Statistics

Named Professors: M. Davidian, D. A. Dickey, A. A. Tsiatis; Named Distinguished Professors: Z. Zeng; Named Distinguished University Professors: A. B. Godfrey; Distinguished University Professors: M. M. Goodman; Professors: B. Bhattacharyya, D. D. Boos, S. K. Ghosh, K. Gross, M. L. Gumpertz, A. R. Hall, J. M. Hughes-Oliver, S. N. Lahiri, W. Lu, S. V. Muse, L. A. Stefanski, J. L. Thorne, J. Tzeng, A. G. Wilson, F. A. Wright, D. Zhang; *Adjunct* Professors: H. D. Bondell, S. Chow, J. R. Chromy, R. B. Conolly, J. H. Goodnight, P. H. Morgan, D. W. Nychka, R. W. Setzer, E. A. Stone, R. D. Wolfinger, S. S. Young; *Emeritus Named Professors*: M. W. Suh; *Emeritus Professors*: P. Bloomfield, C. Brownie, T. M. Gerig, H. J. Gold, T. Johnson, J. F. Monahan, L. A. Nelson, K. H. Pollock, C. H. Proctor, C. P. Quesenberry, J. O. Rawlings, D. L. Ridgeway, W. H. Swallow, J. L. Wasik; *Emeritus Named* Distinguished Professors: W. R. Atchley, J. E. Riviere; Associate Professors: S. Ghoshal, E. B. Laber, A. Maity, D. E. Martin, R. G. Martin, A. A. Motsinger-Reif, J. A. Osborne, B. J. Reich, D. M. Reif, T. W. Reiland, C. E. Smith, R. Song, A. Staicu; Research Associate Professors: C. Arellano, E. Ceyhan; Adjunct Associate Professors: L. Li; Emeritus Associate Professors: A. E. Headen; Assistant Professors: E. C. Chi, J. S. Guinness, X. J. Jeng, J. K. Pacifici, J. W. Richards-Stallings, L. Xiao, S. Yang; Research Assistant Professors: E. H. Griffith; Adjunct Assistant Professors: G. Bobashev, M. G. Ehm, C. M. Gotwalt, J. S. Kimbell, E. C. Mannshardt, H. Zhou; Teaching Associate Professors: H. M. McGowan, P. R. Savariappan; Teaching Assistant Professors: B. A. Alhanti, J. W. Duggins, J. B. Post; Lecturers: B. K. Eder

Admission Requirements: The well-prepared applicant to the department's Master's programs has good grades in a three-semester calculus sequence, a two-semester advanced calculus sequence, a semester of linear algebra, and a two-semester sequence in probability and statistics. Some of these courses may be taken as part of the program, but this may result in lengthening the stay. Students may apply to either the Master's or PhD program directly from a Bachelor's degree. GRE General Test scores are required, but Subject Test scores are not.

The written statement should not exceed two pages and should describe the applicant's academic and career goals as well as special interests in the area of statistics. Applicants may also submit a resume. Individuals applying for fall enrollment and who wish to be considered for financial aid should have their completed applications in by no later than December 15 of the preceding year. Applications arriving after that will be considered but may be assigned lower priority. Starting Summer of 2013, we will begin to offer courses to allow a student to complete the Master of Statistics degree in one calendar year. The one year masters program has the same requirements as the current Master of Statistics program. Since courses start in the summer, the deadline to submit completed applications is January 15 of the same year, and student should apply for 'Summer 1' admission. Students are not normally admitted for spring.

Master's Degree Requirements: All Master's programs in statistics require a minimum of 34 credit hours, of which 12 are first-year core (ST 512, ST 521, ST 522, ST 552 and their labs), one is supervised consulting (ST 641). The remainders are statistics and/or supporting electives.

Doctoral Degree Requirements: The Ph.D. program in statistics requires 22 course credit hours beyond the Master's,

of which 9 are Ph.D. core courses (ST 779, ST 793, and ST 758), one is supervised consulting (ST 841), and 12 are Ph.D.-level statistics electives.

Student Financial Support: Departmental assistantships and fellowships are awarded to students in the Ph.D. program each year on a competitive basis.

Other Relevant Information: With a large graduate faculty representing virtually all major statistical specializations, the department is recognized as a world leader in graduate education and research in statistics. The Department provides a dynamic environment for teaching, core research and collaborative research across disciplines, with formal program concentrations in biostatistics, bioinformatics, environmental, financial and mathematical statistics.

Click on **Graduate Courses** for current course information.

STEM Education

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
STEM Education				Y			Y	

GRADUATE FACULTY

Director of Graduate Programs:

M. R. Blanchard, Box 7801, meg_blanchard@ncsu.edu, Science, Technology, Engineering, and Mathematics Education

The STEM Education Program offers a Master's of Education (MEd) Distance Education with concentration in Science Education, Engineering and Technology Education, and Mathematics and Statistics Education. We prepare educators and researchers for positions as teachers, leaders, and university faculty of the highest quality. We are particularly proud of our emphasis on the use of technology to enhance teaching. Students take courses in their educational specialty in Science Education, and in academic discipline areas including: biological sciences, chemistry, earth science, environmental science, interdisciplinary science or physics.

Our Master's program (MEd) leads to North Carolina M-licensure as a teacher of science at grades 6-12 or advanced credentials for informal educators. Programs are also available for those seeking advanced graduate-level certification as a teacher. Finally, students may design a program to prepare for teaching careers in post-secondary education.

Some of our students elect to move directly from our master's into our doctoral program in <u>Learning and Teaching in STEM – Science Education</u>, <u>Engineering and Technology Education or Mathematics and Statistics Education</u>. These students are knowledge-seekers and are eager to pursue educational problems and develop critical thinking skills in a collaborative environment. The programs prepare individuals for positions in their fields of study related to:

- 1. scholarly inquiry and discourse in science education,
- 2. preparation of K-12 teachers and informal science educators,
- 3. instruction and development issues in K-16, and
- 4. leadership positions.

Admission Requirements: Applicants for the M.Ed degree must submit a completed application specific to the program concentration. No GRE is required. Please see the <u>concentration area website</u> for details.

Science Education
Engineering and Technology Education
Mathematics and Statistics Education

The deadlines for submission of an application, and academic and professional background necessary for admission differ by specific concentration.

Student Financial Support: A small number of scholarships may be available through the <u>College of Education</u> or NC State University. For those who apply for financial aid, there may be some <u>grants available through the university</u>. Please discuss these opportunities directly with program area faculty.

Click on Graduate Courses for current course information.

Teacher Education and Learning Sciences

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Curriculum and Instruction				Y			Y	

GRADUATE FACULTY

Directors of Graduate Programs:

- J. K. Lee, Box 7801, 919/513-0126, iklee@ncsu.edu, Teacher Education and Learning Sciences
- J. T. DeCuir-Gunby, Box 7801, 919/513-7669, jessica decuir@ncsu.edu, Teacher Education and Learning Sciences

Professors: S. B. Baker, C. L. Crossland, D. A. Cullinan, J. T. DeCuir-Gunby, E. R. Gerler, G. M. Kleiman, J. K. Lee, P. L. Marshall, S. C. Nassar, J. Nietfeld, K. M. Oliver, J. A. Picart, E. J. Sabornie, H. A. Spires, S. Ting, E. N. Wiebe; Emeritus Professors: B. J. Fox, L. K. Jones, C. A. Pope, R. J. Pritchard, N. A. Sprinthall; Associate Professors: C. M. Beal, D. S. Davis, H. C. Edwards, D. Eseryel, M. A. Evans, M. A. Grimmett, J. H. Hunt, M. M. Manfra, M. M. Thomson, A. M. Wiseman, C. A. Young; Adjunct Associate Professors: H. A. Davis-Bauer; Emeritus Associate Professors: J. F. Arnold, S. S. Osborne, L. M. Thies-Sprinthall; Assistant Professors: M. M. Falter, D. L. Gray, J. F. Grifenhagen, C. D. Hoggan, C. C. Lee, J. N. Pearson, T. A. Rutherford, J. Wilson; Clinical Assistant Professors: E. T. Horne; Adjunct Assistant Professors: J. O. Corn, S. B. Freeman, M. J. Maher, M. K. Monaco, R. E. Tyler-Walker; Teaching Associate Professors: A. D. Harrington, A. C. Smith; Teaching Assistant Professors: D. E. Benge, D. E. Crissman, M. J. Jeffries, J. O. McKeown, B. H. Setser; Lecturers: L. G. Hervey, L. E. Huffman, J. W. Lucas

The department of Teacher Education and Learning Sciences offers master's degrees in multiple areas of curriculum and instruction; Curriculum and Developmental Supervision, Educational Psychology, and New Literacies and Global Learning (with sub-concentrations in English education, general studies, middle grades, K-12 reading education, and social studies education.

For more please see https://ced.ncsu.edu/graduate/graduate-programs/masters/

The NC Department of Public Instruction has conferred accreditation to the graduate programs in Teacher Education and Learning Sciences. The College of Education is approved any the Council for the Accreditation of Educator Preparation (CAEP).

Admission Requirements: Curriculum and Instruction: A 500-800 word statement describing professional goals is required, along with transcripts and reference letters. Some areas of study require that applicants be qualified to hold a baccalaureate-level teaching license or have teaching experience. The Graduate School requires a 3.0 in the undergraduate program. Students from diverse backgrounds are welcome to apply. Admission is competitive. The best qualified applicants will be accepted up to the limited number of spaces available for new students. TOEFL or IELTS scores for international applicants whose first language is not English. GRE scores not more than five years old are required for the Educational Psychology program area.

Master's Degree Requirements: Curriculum and Instruction: A minimum of 30 course credit hours. For the M.S. degree, a minimum of 36 hours is required. The M.S. degree requires a thesis and final oral examination approved by the graduate committee.

Student Financial Support: Teaching Assistantships are available on a limited basis.

Click on **Graduate Courses** for current course information.

Technical Communications

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Technical Communication				Y				

GRADUATE FACULTY

Directors of Graduate Programs:

H. Ding, Box 8105, hding@ncsu.edu, English

J. S. Mulholland, Box 8105, ismulhol@ncsu.edu, English

Professors: J. Swarts; Emeritus Professors: C. R. Miller; Associate Professors: H. Ding, S. M. Katz; Emeritus Associate Professors: D. H. Covington, R. S. Dicks; Assistant Professors: S. L. Pigg, D. M. Walls

The Master of Science in technical communication is designed to prepare professional communicators for advanced positions in industry and research organizations; with appropriate electives, students can prepare for careers in web design and development, software documentation, environmental communication, medical writing, industrial training in writing and editing, publications management and related areas.

Admission Requirements: Applicants should submit a resume and a writing sample. The application deadline is June 15. Those who wish to be considered for teaching assistantships should complete the application by February 1. Students are admitted for either the fall or spring semesters.

Requirements for MS in Technical Communication: The program requires 33 semester hours: 15 hours in the fields of technical writing, publication management, rhetoric and a projects course; the remaining hours are taken in applications, theory and methods and cross-disciplinary courses. Students must also satisfy a requirement for one semester of professional work experience. See <u>program website</u> for specific requirements by concentration.

Student Financial Support: <u>Teaching assistantships</u> are available for a limited number of promising students. These students work with an experienced teacher in their first year to assist in 300-level professional writing courses. They devote half time in subsequent semesters to teaching technical communication.

Click on **Graduate Courses** for current course information.

NCSU Graduate Catalog

Textile and Apparel Management

Degrees Offered:

	Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
I	<u>Cextiles</u>				Y		Y		

GRADUATE FACULTY

A. M. Seyam, Department Head

Director of Graduate Programs:

L. L. Parrillo-Chapman, Box 8301, 919/513-4020, <u>llparril@ncsu.edu</u>, Textile and Apparel Management

Named Professors: R. L. Barker, D. Hinks, W. Oxenham; Named Distinguished Professors: B. Pourdeyhimi; Named Distinguished University Professors: A. B. Godfrey; Professors: T. G. Clapp, T. K. Ghosh, C. L. Istook, J. A. Joines, M. W. King, T. A. Lamar, K. K. Leonas, T. J. Little, S. Michielsen, M. M. Moore, A. M. Seyam, R. Shamey, X. Zhang; Adjunct Professors: D. A. Bruner, K. Mathur, W. G. O'Neal, T. W. Theyson; Emeritus Named Professors: S. K. Batra, M. W. Suh, S. C. Winchester; Emeritus Professors: R. A. Barnhardt, R. A. Donaldson, A. H. El-Shiekh, N. C. Powell, W. C. Stuckey; Emeritus Distinguished Professors: M. H. Mohamed; Associate Professors: K. E. Annett-Hitchcock, P. Banks-Lee, K. A. Barletta, H. H. Hergeth, G. L. Hodge, R. Kotek, L. L. Parrillo-Chapman, L. F. Rothenberg, Y. Xu; Adjunct Associate Professors: M. T. Fralix, G. M. Garland, J. Meng, M. A. Messura, S. B. Moore, E. D. Parrish; Emeritus Associate Professors: H. A. Davis, P. B. Hudson, M. L. Robinson, G. W. Smith; Assistant Professors: E. N. Ford, D. R. Matthews, J. A. Porterfield, E. Shim, M. Suh, A. J. West, J. F. Woodbridge; Research Assistant Professors: G. M. Garland, B. Maze; Teaching Associate Professors: W. D. Harazin; Lecturers: G. M. Devine

NC State's College of Textiles, and the Department of Textile and Apparel, Technology and Management (TATM), prepares future leaders for the textile, apparel, home/furniture, fashion and retail industries. Based in Raleigh, North Carolina, undergraduate and graduate programs (Fashion and Textile Management; Fashion and Textile Design) incorporate global marketplace dynamics with a strategic management focus. Our graduates incorporate "art/design" + "science/technology" + "management" concepts in creative problem-solving. Our program is equipped with access to and experiences utilizing the latest industry technologies. The majority of the students have an enriching and intensive study abroad experience. Our program faculty works closely with industry partners, including the Department's 24-member Industry Advisory Board, to develop academic and experiential "real world" learning experiences. Student internships combined with a global alumni network provide an additional "value-added" experience, with our students prepared to make an immediate impact in diverse companies throughout the global supply chain. Career paths of our graduates are in the areas of: brand marketing, merchandising, retail, sourcing, private brand development, market analyst, design, product development, supply chain, and public relations and communications.

Master of Science in Textiles Degree: The objective of the Master of Science (MS) in Textiles is to prepare students for careers that require independent research skills, including designing, planning, and carrying out research projects. Students can choose to focus their studies in one of the following areas of specializations: Textile and Fashion Design, Retail and Brand Management, Textile Technology, and Textile Management. The MS degree requires a minimum of 36 hours of study including a thesis and typically takes 2 years to complete. Students interested in continuing with a Ph.D. in Textile Technology and Management (TTM) or Fiber and Polymer Science (FPS) are encouraged to pursue the MS degree.

Master of Textiles Degree: The Non-Thesis Master of Textiles (MT) program offers preparation and career advancement for students with interests in the design, management, and technological perspectives of the textile industry. The program is available on campus and online via Distance Education (DE) with flexibility to accommodate a breadth of student needs. The MT degree requires a minimum of 30 credit hours and can be completed in only two semesters (1 year) of full-time on campus study or up to a maximum of six (6) years for part time on-campus or DE

students.

Accelerated Bachelor's and Master's Degrees: The Accelerated Bachelor's and Master's (ABM) degrees in the Department of Textile and Apparel, Technology and Management (TATM) are designed to provide exceptional undergraduate students in the Fashion and Textile Management (FTM) and Fashion and Textile Design (FTD) programs with the opportunity to complete a BS degree (in FTM or FTD) and a TATM Master's degree in 5 to 5 1/2 years. Students in the ABM program can choose to pursue a non-thesis track in which they can potentially complete a Master of Textiles (MT) degree within 12 months after obtaining a Bachelor's (BS) degree in FTM or FTD. Alternatively, students can choose the thesis track in which they can potentially complete a Master of Science in Textiles (MS) degree within the 18 months following obtaining a BS degree in FTM or FTD.

Admission Requirements: Students with a Bachelor of Science or a Bachelor of Arts degree may apply to either of the degree programs. Students apply with degrees in textiles, engineering, management, or design. The minimum acceptable overall Grade Point Average (GPA) is a 3.0 out of 4.0, based on most current U.S. universities. Students should have 20 credit hours in mathematics and natural sciences in their undergraduate degree. Degrees must be obtained from a four-year, accredited university. Graduate transfer credits can only be from other U.S. universities, and must be approved by the student's graduate committee. Certificates and diplomas are not recognized as undergraduate degrees.

Click <u>Application</u> for more information on application procedures and requirements.

Student Financial Support: Competitive financial aid in the form of assistantships may be available for full-time Master of Science students.

Other Relevant Information: The Department of Textile and Apparel, Technology and Management houses a Digital Design lab which specializes in 3D Body Scanning, Direct Digital Printing, Whole Body Knitted Garments, and Computer Aided Apparel and Fabric Design. Additionally, the department includes the Fashion Studio, The Textile Management Sciences Lab, Textile Design Studio, Braiding Lab, Three-Dimensional Weaving Lab, and an Advanced Testing Lab that will allow students to experience hands-on advanced textile technology and management.

Click **Graduate Programs in TATM** for more details on degree requirements.

Click on <u>Graduate Courses - Textile Technology Management</u> for current course information.

NCSU Graduate Catalog

Textile Chemistry

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Textile Chemistry				Y				

GRADUATE FACULTY

Director of Graduate Programs:

E. A. DenHartog, Box 8301, 919 515 6659, eadenhar@ncsu.edu, Textile Engineering, Chemistry and Science

Named Professors: R. L. Barker, H. S. Freeman, D. Hinks, A. E. Tonelli; Named Distinguished Professors: B. Pourdeyhimi; Distinguished Professors: R. J. Spontak; Professors: K. R. Beck, T. G. Clapp, L. I. Clarke, A. M. El-Shafei, R. E. Gorga, P. J. Hauser, S. M. Hudson, W. J. Jasper, J. A. Joines, M. W. King, M. G. McCord, S. Michielsen, M. Pasquinelli, J. P. Rust, R. Shamey, A. J. Williams, X. Zhang; Adjunct Professors: A. Bogdanovich, W. G. O'Neal; Emeritus Named Professors: S. P. Hersh, C. B. Smith; Emeritus Professors: A. H. El-Shiekh, P. L. Grady, B. S. Gupta, G. N. Mock, M. H. Theil, C. Tomasino; Emeritus Distinguished Professors: M. H. Mohamed; Associate Professors: P. D. Bradford, E. A. DenHartog, J. S. Jur, R. Kotek, W. E. Krause, J. P. Lavelle, S. I. Salmon; Research Associate Professors: D. P. Griffis, D. B. Thompson; Adjunct Associate Professors: J. P. Casani, G. M. Garland, T. G. Montgomery; Assistant Professors: E. N. Ford, W. Gao, E. Shim, N. R. Vinueza Benitez; Research Assistant Professors: H. A. Boyter; Teaching Professors: H. Hamouda

Master of Science in Textile Chemistry (MS/TC): The Master of Science in Textile Chemistry degree program, offered by the Department of Textile Engineering, Chemistry and Science (TECS) in the Wilson College of Textiles, emphasizes the fundamental principles of chemistry, physics, and mathematical sciences, and applies those to polymer science, dyeing and finishing technology, color science, dye chemistry, and fiber analysis and formation. Some of the active research projects in textile chemistry include study of toxicity and mutagenicity of dyes and pigments, biomedical applications of polymers, surface treatment and finishing of polymers using plasma, color perception and imaging, dye activated solar cells, dyebath modeling and control, polymer and fiber science, and environmental sustainability including pollution prevention. Some of our students opt to co-major in other programs including chemical engineering, chemistry, textile engineering, and biomedical engineering. Our program is highly relevant to many in the chemical, medical, polymer, retail and textile industries, as well as environmental and forensic science. Graduates of Textile Chemistry are recruited by a broad range of employers, including traditional textile areas or even areas outside of textiles, such as research laboratories or the State and Federal Bureaus of Investigation. Some graduates have also gone onto doctoral programs, particularly in fiber and polymer science (FPS) and textile technology management (TTM).

Admission Requirements (MS/TC): Applicants must have an undergraduate degree in chemistry or an equivalent degree with demonstrated proficiency in the appropriate calculus-based sciences (such as physics) and core chemistry competencies, including physical chemistry and organic chemistry. If these requirements are not met, additional coursework may be required prior to admission into the program. Applicants are also expected to meet the following minimum requirements: a GPA of 3.0 or First Class Honors in the Bachelor's degree; a TOEFL score of 213 for the computer-based, and 80 for internet-based (international students) OR IELTS scores with an overall band score of at least 6.5; and three letters of reference. Note that the GRE has become optional.

Degree Requirements Master of Science in Textile Chemistry (MS/TC): The Masters of Science in Textile Chemistry (MS TC) has two options, a thesis option (Option A) and a non-thesis option (Option B).

MS TC Option A (Thesis) requires a minimum of 32 credit hours, with a minimum of 24 credit hours (8 courses) meeting the following requirements: 1) At least 12 credit hours of Chemistry (CH or TC) courses or from the approved TC offerings table. Substitutions must be approved by the Director of Graduate Programs; 2) Up to 9 credit hours are to

be chosen from supporting areas. The courses may be selected from a single field, and will thus be designated as a Minor (e.g. statistics, chemistry, textile technology, or biomedical engineering) or from more than one discipline (interdisciplinary minor). No more than one of these courses may be a 400-level course. In addition, two semesters of TC601 (Graduate Seminar are required. For the thesis a minimum of six hours of thesis related research is required (TC 695, TC693 or TC630).

MS TC Option B (Non-Thesis) requires a minimum of 35 credit hours, with a minimum of 27 credit hours (9 courses) meeting the following requirements: 1) At least 18 credit hours from the approved TC offerings table. Substitutions must be approved by the Director of Graduate Programs; 2) Up to 9 credit hours are to be chosen from supporting areas. In addition, two semesters of TC601 (Graduate Seminar are required, and a minimum of six hours of TE 630 (Independent Study) or approved equivalent independent project courses are required.

Student Financial Support: Although financial aid is limited, some support is available for full-time students in the form of research assistantships, teaching assistantships, or fellowships. Research assistantships are only available for M.S. students in the thesis option, and students should contact individual faculty members in their research interest areas for such opportunities. While students can typically find support by their second semester, they should be prepared to cover all expenses for at least the first semester.

Other Relevant Information: The TECS Department either houses or has access to state-of-the-art facilities for conducting quality research and independent study projects related to this degree program area. Close cooperation between COT faculty and the fiber/textile and allied industries provides students with opportunities for learning and employment.

Click on <u>Graduate Courses - Textile Chemistry</u> for current course information.

Click on <u>Graduate Courses - Textile Engineering</u> for current course information.

Click on Graduate Courses -Textile Materials Science for current course information.

Click on <u>Graduate Courses -Textile Technology</u> for current course information.

NCSU Graduate Catalog

Textile Engineering

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Textile Engineering				Y				

GRADUATE FACULTY

Director of Graduate Programs:

E. A. DenHartog, Box 8301, 919 515 6659, eadenhar@ncsu.edu, Textile Engineering, Chemistry and Science

Named Professors: R. L. Barker, H. S. Freeman, D. Hinks, W. Oxenham, A. E. Tonelli; Named Distinguished Professors: B. Pourdeyhimi; Distinguished Professors: R. J. Spontak; Professors: K. R. Beck, T. G. Clapp, L. I. Clarke, A. M. El-Shafei, T. K. Ghosh, R. E. Gorga, P. J. Hauser, S. M. Hudson, W. J. Jasper, J. A. Joines, M. W. King, M. G. McCord, S. Michielsen, M. Pasquinelli, J. P. Rust, A. M. Seyam, R. Shamey, A. J. Williams, X. Zhang; Adjunct Professors: W. G. O'Neal; Emeritus Named Professors: C. B. Smith; Emeritus Professors: R. A. Barnhardt, A. H. El-Shiekh, P. L. Grady, B. S. Gupta, G. N. Mock, M. H. Theil; Emeritus Distinguished Professors: M. H. Mohamed; Associate Professors: P. Banks-Lee, P. D. Bradford, E. A. DenHartog, G. L. Hodge, J. S. Jur, R. Kotek, W. E. Krause, J. P. Lavelle, S. I. Salmon; Research Associate Professors: D. P. Griffis, D. B. Thompson; Adjunct Associate Professors: J. P. Casani, G. M. Garland; Assistant Professors: E. N. Ford, W. Gao, E. Shim, N. R. Vinueza Benitez; Research Assistant Professors: N. Anantharamaiah, G. M. Garland, B. Maze, R. Ormond, B. Yeom; Adjunct Assistant Professors: H. A. Boyter; Teaching Professors: H. Hamouda

Master of Science in Textile Engineering (MS/TE): The Master of Science in Textile Engineering degree program, offered by the Department of Textile Engineering, Chemistry and Science (TECS) in the Wilson College of Textiles, offers unique educational and research opportunities within the domain of textile materials, structures, and technologies, as well as process design. The program is interdisciplinary in nature, drawing upon polymer and fiber science, mathematical sciences, other engineering disciplines, and the physical sciences. Current research activities in textile engineering include inventory and supply chain control, molecular modeling, nonwovens, thermal and protection sciences, polymer and fiber science, biomedical applications of textiles, wearable and smart textiles, textile composites, filtration, nanotextiles, and sustainability. Since this program encompasses such diverse fields of study, many of our students opt to minor or co-major in other programs at NC State, such as statistics, biomedical engineering, chemical engineering, and industrial engineering. Graduates of Textile Engineering are recruited by a broad range of employers, including traditional textile areas such as performance athletic wear or outdoor apparel and equipment, or even areas outside of textiles, such as hospitals, research laboratories, or banks. Some graduates have also gone onto doctoral programs, particularly in fiber and polymer science (FPS) and textile technology management (TTM).

Admission Requirements (MS/TE): Applicants must have an undergraduate engineering degree or demonstrated proficiency in the appropriate calculus-based sciences (such as physics) and technical competencies in areas such as fiber science. If these requirements are not met, additional coursework may be required prior to admission into the program. A background in materials science, engineering mechanics, statistics, or chemical engineering is highly recommended. Formal education in textile engineering or materials science is desired but not required. Applicants are also expected to meet the following minimum requirements: a GPA of 3.0 or First Class Honors in the bachelor's degree; a TOEFL score of 213 for the computer-based, and 80 for internet-based (international students) OR IELTS scores with an overall band score of at least 6.5; and three letters of reference. Note that the GRE has become optional.

Degree Requirements Master of Science in Textile Engineering (MS/TE): The Masters of Science in Textile Engineering requires a minimum of 32 credit hours is required, with a minimum of 24 credit hours (8 courses) meeting the following requirements: 1) Students must take a minimum of 15 credit hours of courses at the ≥500 level offered by TECS faculty that have the following prefixes: TE, TMS, TC (PCC), TT, FPS, and TTM. View the lists of courses with these prefixes. 2) Students must take a minimum of 12 credit hours of engineering courses at the ≥500 level (i.e.,

courses offered by an engineering department. Note: This includes courses with the TMS prefix). In addition, two semesters of TE 601 (Graduate Seminar).

The Masters of Science in Textile Engineering has two options, a thesis option (Option A) and a non-thesis option (Option B). For Option A (Thesis) a minimum of six credit hours of thesis related research (TE 695, TE 693, or TE 630) is required, whereas, for Option B a minimum of six hours of TE 630 (Independent Study) or approved equivalent independent project courses are required.

Student Financial Support: Although financial aid is limited, some support is available for full-time students in the form of research assistantships, teaching assistantships, or fellowships. Research assistantships are only available for M.S. students in the thesis option, and students should contact individual faculty members in their research interest areas for such opportunities. While students can typically find support by their second semester, they should be prepared to cover all expenses for at least the first semester.

Other Relevant Information: The TECS Department either houses or has access to state-of-the-art facilities for conducting quality research and independent study projects related to this degree program area, including fiber science and textile engineering. Close cooperation between COT faculty and the fiber/textile and allied industries provides students with opportunities for learning and employment.

Click on <u>Graduate Courses - Textile Chemistry</u> for current course information.

Click on <u>Graduate Courses - Textile Engineering</u> for current course information.

Click on Graduate Courses -Textile Materials Science for current course information.

Click on <u>Graduate Courses - Textile Technology</u> for current course information.

NCSU Graduate Catalog

Textile Technology Mgmt

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Fiber and Polymer Science	Y							
Textile Technology Management	Y							

GRADUATE FACULTY

Director of Graduate Programs:

S. Michielsen, Box 8301, 919/515-1414, Stephen Michielsen@ncsu.edu, Textile Engineering, Chemistry and Science

Named Professors: R. L. Barker, S. Fang, H. S. Freeman, D. Hinks, S. A. Khan, R. E. King, W. Oxenham, A. E. Tonelli; Named Distinguished Professors: B. Pourdeyhimi; Named Distinguished University Professors: A. B. Godfrey, R. B. Handfield, T. J. Hodgson, B. M. Novak, M. Rappa; *Distinguished Professors*: J. Genzer, R. J. Spontak; Professors: H. Ade, C. M. Balik, K. R. Beck, C. C. Bozarth, C. L. Bumgardner, T. G. Clapp, A. M. El-Shafei, P. S. Fedkiw, R. E. Fornes, T. K. Ghosh, R. E. Gorga, C. B. Gorman, P. J. Hauser, S. M. Hudson, C. L. Istook, W. J. Jasper, J. A. Joines, M. W. King, T. A. Lamar, K. K. Leonas, T. J. Little, M. G. McCord, S. Michielsen, M. M. Moore, M. Pasquinelli, J. P. Rust, A. M. Seyam, R. Shamey, R. A. Venditti, A. J. Williams, J. R. Wilson, X. Zhang; Adjunct Professors: E. G. Loboa-Polefka, K. Mathur, O. J. Rojas; Emeritus Named Professors: S. K. Batra, S. P. Hersh, H. B. Hopfenberg, C. B. Smith, M. W. Suh, S. C. Winchester, C. F. Zorowski; *Emeritus Professors:* R. A. Barnhardt, R. A. Donaldson, A. H. El-Shiekh, R. E. Fornes, P. L. Grady, B. S. Gupta, D. M. Holthausen, G. N. Mock, H. G. Olf, N. C. Powell, S. T. Purrington, W. C. Stuckey, M. H. Theil, C. Tomasino, C. F. Zorowski; *Emeritus Distinguished* Professors: M. H. Mohamed; Associate Professors: K. E. Annett-Hitchcock, P. Banks-Lee, K. A. Barletta, P. D. Bradford, E. A. DenHartog, H. H. Hergeth, G. L. Hodge, J. S. Jur, R. Kotek, W. E. Krause, J. P. Lavelle, L. A. Lucia, L. Pal, L. L. Parrillo-Chapman, L. F. Rothenberg, S. I. Salmon, Y. Xu; Research Associate Professors: D. P. Griffis; Adjunct Associate Professors: J. P. Casani, G. M. Garland, S. B. Moore; Emeritus Associate Professors: S. N. Chapman, J. K. McCreery, G. W. Smith; Assistant Professors: E. N. Ford, W. Gao, S. Lim, D. R. Matthews, J. A. Porterfield, E. Shim, M. Suh, N. R. Vinueza Benitez, A. J. West, J. F. Woodbridge; Research Assistant Professors: N. Anantharamaiah, G. M. Garland, B. Maze, B. Yeom; *Teaching Professors:* H. Hamouda, H. L. Nuttle; *Lecturers:* G. M. Devine

Textile Technology Management is a multidisciplinary program designed to educate students for research and management careers in technology management in the fiber, textile, apparel and related industries complex. The program is designed to give the students a breadth of knowledge of the materials and technologies employed in the industries as well as the quantitative and analytical tools of management.

Admission Requirements: Students majoring in textiles; industrial, systems and manufacturing engineering; statistics; operations research; computer science; economics; consumer economics; marketing; and business administration, and having an average in their undergraduate studies of 3.5/4.0 and a Master's degree will normally qualify for admission. Exceptionally qualified students (3.75/4.0 undergraduate GPA) may be admitted directly without a Master's degree.

Doctoral Degree Requirements: Fixed credit-hour requirements for the Doctor of Philosophy degree are 72. (Up to 18 hours from an M.S. may be applied against the 72.) Students are admitted to candidacy for the Ph.D. degree after passing a prescribed group of courses, completing a scholarly critique of existing knowledge in the field of specialization, and orally defending a research proposal. They must also have demonstrated proficiency in English technical writing course and, depending on the nature of their research interests, may also be required to demonstrate a reading knowledge of one foreign language.

Student Financial Support: Financial aid in the form of Graduate Research Assistantships, Teaching Assistantships, or other assistantships and fellowships is available to a limited number of students.

Course Offerings: Extensive use may be made of graduate course offerings in other colleges on campus when developing the minor field. See departmental listing for descriptions.

Click on <u>Graduate Courses - Textile Technology Management</u> for current course information.

Click on <u>Graduate Courses - Textile Technology</u> for current course information.

NCSU Graduate Catalog

Toxicology

Degrees Offered:

Program Title	Ph.D.	Ed.D.	D.Des.	M.S.	M.A.	Master of	M.Ed.	MFA
Toxicology	Y			Y		Y		

GRADUATE FACULTY

Director of Graduate Programs:

S. W. Kullman, Box 7633, swkullma@ncsu.edu, Biological Sciences

Named Professors: W. G. Cope, H. B. Patisaul; Named Distinguished Professors: R. R. Anholt, R. Roe; Professors: K. B. Adler, R. E. Baynes, J. C. Bonner, M. Breen, D. Buchwalter, D. J. Burke, J. M. Cullen, H. M. Hassan, J. M. Horowitz, M. Hyman, S. W. Kullman, S. M. Laster, J. M. Law, G. A. LeBlanc, E. G. Nichols, E. F. Rissman, P. L. Sannes, D. Shea, R. C. Smart, M. K. Stoskopf, J. Tsuji, Y. Tsuji; Research Professors: S. M. Belcher, A. R. Brody; Adjunct Professors: D. W. Threadgill, D. C. Zeldin; Emeritus Professors: E. Hodgson, R. B. Leidy, N. A. Monteiro-Riviere, J. F. Roberts; Associate Professors: J. A. Hoppin, C. Hoyo, C. J. Mattingly, N. M. Nascone-Yoder, D. M. Reif, M. Rodriguez-Puebla; Adjunct Associate Professors: S. E. Fenton; Assistant Professors: D. L. Aylor, M. S. Bereman, M. A. Cowley, D. Fourches, A. J. Planchart; Research Assistant Professors: J. R. Hall, D. A. Skaar; Adjunct Assistant Professors: S. E. Fenton, R. L. Langley

The Toxicology Program provides course work and research training to prepare prospective toxicologists and environmental health scientists for careers in academia, government, and industry. Research in the program spans an array of topics ranging from the molecular to population level consequences of toxicant exposure. Areas of research excellence within the program include elucidating relationships among cell signaling processes and stressor-induced disease and toxicity, establishing mechanisms of system-specific toxicity, using physiological and genomic approaches to understand differences in species and individual susceptibility to environmental contaminants, and unraveling gene-environment interactions. Some specific research areas include: apoptosis, endocrine disruption, trace metal bioaccumulation and detoxification, oxidative stress/gene regulation/cell toxicity, asthma and lung fibrosis, cancer and mutagenesis, ecotoxicology, developmental abnormalities, chemical exposure assessment and environmental epidemiology. Some examples of the types of environmental agents that are being investigated include chemical carcinogens, trace metals, pesticides, particulates metals, endocrine disruptors, nanoparticles and UVB radiation.

Admission Requirements: Prospective students should have a strong background in the biological and physical sciences with a minimum undergraduate grade point average of 3.0 (on a 4.0 scale) and a minimum Quantitative GRE score in the 70th percentile. GRE subject tests are not required. International students whose primary language is not English must submit TOEFL scores. A written statement should describe the applicants academic and career goals as well as their area of interest. All applications are reviewed by an admissions committee. Students are encouraged to submit applications no later than January 15 for Fall admission.

Master of Science Degree Requirements: The M.S. is a research-oriented degree requiring a minimum of 30 credit hours and a written thesis. At least 20 credit hours must be graduate-level courses and a core curriculum is required.

Master of Toxicology Degree Requirements: The MTOX degree is a non-research degree designed for those interested in pursuing non-research careers in toxicology and environmental health science, and/or working professionals seeking to further their education and advance their careers. To accommodate working professionals the MTOX degree can be pursued on a part-time basis. A minimum of 30 credit hours is required, with at least 14 credit hours in toxicology courses.

Doctoral Degree Requirements: The Ph.D. program is designed to train students to become independent scholars capable of conducting unsupervised and original research. Students enroll in a core curriculum similar to that of the

M.S. degree and additional courses as determined by his/her advisory committee. Normally a total of 72 credit hours is required, with the majority of these credits being dissertation research. Students must pass both a written and oral preliminary exam prior to advancing to Ph.D. candidacy. A doctoral dissertation presenting the students original research is written and defended in a final oral examination.

Student Financial Support: Financial assistance is available for qualified applicants through traineeships, fellowships, teaching assistantships and research assistantships.

Other Relevant Information: Students pursuing either the M.S. or Ph.D. degree may elect to specialize in General Toxicology, Environmental Toxicology, or Molecular and Cellular Toxicology. More details can be obtained on the <u>Environmental and Molecular Toxicology</u> web site.

Click on **Graduate Courses** for current course information.

Courses from Associated Departments

BIT 510 Core Technologies in Molecular and Cellular Biology

BIT 567 Polymerase Chain Reaction Technologies

BIT 568 Genome Mapping

BIT 569 RNA Purification and Analysis

BCH 553 Biochemistry of Gene Expression BCH 701 Macromolecular Structure

BCH 703 Macromolecular Synthesis and Regulation BCH 705 Molecular Biology of the Cell

BCH 761 Advanced Molecular Biology of the Cell

CBS 754 Principles of Analytical Epidemiology CBS 762 Principles of Pharmacology

CBS 770 Cell Biology

CBS (TOX) 771 Cancer Biology

CBS 795A Special Topics: Veterinary Pathology I. General Pathology GN 820 Professional Development

HS 707 Environmental Stress Physiology MB 751 Immunology

MEA 540 Principles of Physical Oceanography MEA 750 Marine Benthic Ecology

PHY 503 General Physiology I PHY 504 General Physiology II

PHY 780 Mammalian Endocrinology

ZO 509 Ecology of Stream Invertebrates

ZO 513 Comparative Physiology

ZO 524 Comparative Endocrinology

Courses not listed above but approved by the students advisory committee can also be included toward the 6 credit hour elective requirement. Course descriptions can be found at the <u>Registration and Records website</u>.

NCSU Graduate Catalog

Biotechnology (Minor Program)

Professor R. M. Kelly, Director Box 7512 919.515.4230

Email: rmkelly@ncsu.edu

Home page: http://biotech.ncsu.edu

The Biotechnology Program includes faculty from over 20 departments in the Colleges of Agriculture and Life Sciences, Science, Engineering, Natural Resources and Veterinary Medicine Courses in the program provide hands-on experience in cutting-edge research techniques, as well as experimental design and analysis. The graduate minor is available to students who successfully complete six to eight credit hours in selected laboratory core courses described below and conduct their graduate thesis research in an area of biotechnology. Graduate students must include the minor in their Plan of Work, and at least one member of the student's thesis committee must be a member of the Biotechnology faculty.

REQUIRED (4 credits)

BIT 510 Core Technologies in Molecular and Cellular Biotechnology (4 credits)

BIOTECHNOLOGY LABORATORY ELECTIVES (2 credits each)

For a complete listing of all elective courses, please visit the **BIT** website. Some of these include:

BIT 564 Protein Purification

BIT 566 Animal Cell Culture

BIT 571 RNA interference and model organisms

BIT 573 Protein Interactions

BIT 572 Proteomics

BIT 577 Metagenomics

BIT 579 Yeast Metabolic Engineering

BIT 595 Special Topics

Students may be approved by an <u>Academic Coordinator</u> of the BIT Program to place out of BIT 510 if they have substantial practical experience and conceptual knowledge of the material covered, and can then instead take one additional 2-credit BIT advanced laboratory elective course (completing the minor requirements with 6 credits of coursework rather than 8).

Cognitive Science (Minor Program)

Dr. Ronald P. Endicott, Program Director Department of Philosophy and Religious Studies

NCSU Box 8103 Phone: 919.515.6195

Email: ron endicott@ncsu.edu

Cognitive Science is an area of interdisciplinary research that seeks to understand the nature, processes, and evolution of mind. The Cognitive Science Program is administered by the Department of Philosophy and Religious Studies and supported by a strong faculty drawn from the fields of Psychology, Neurobiology, Computer Science, Linguistics, and Philosophy. The program thus fosters development of ideas and theories within the disciplines of Cognitive Science, for example, theories of rational agency, logical reasoning, cognitive processing, computational psychology, artificial intelligence, neurobiology, and the evolution of cognitive systems.

Requirements: Graduate students who minor in Cognitive Science must complete a minimum of nine hours of courses (or more as determined by the student's committee), with a grade of B or better, distributed as follows.

One core courses (3 hrs):

PHI/PSY 525 Introduction to Cognitive Science

Two additional courses (6 hrs) outside the degree-granting program from the following:

PSY 500 Visual Perception

PSY 502 Physiological Psychology

PSY 508 Cognitive Processes

PHI 540 The Scientific Method

CSC 520 Artificial Intelligence I

CSC 522 Automated Learning and Data Analysis

CSC 707 Automata, Languages and Computability Theory

CSC 720 Artificial Intelligence II

ENG 524 Introduction to Linguistics

ENG 584 Studies in Linguistics

ZO 588 Neurobiology

Any student who has previously completed the equivalent of the above core course for credit toward another degree (e.g., PHI/PSY 425 as an undergraduate) is required to complete an additional course (3 hours) from the above list.

Up to three credits of equivalent graduate course work may be accepted in the place of one course on the list above, subject to the approval of the Director for the Cognitive Science Program.

Graduate Students who wish to minor in cognitive science must declare the minor on their Graduate Plan of Work, which they develop with their graduate advisory committee. This committee must include a representative of the minor, and the student must send a copy of the Plan of Work to the Director of the Cognitive Science Program.

Computational Engineering and Sciences (Minor Program)

GRADUATE FACULTY

Professor Yousry Azmy, Program Coordinator

The Computational Engineering and Sciences Program includes faculty from twelve departments in the College of Engineering and College of Sciences. Graduate students pursuing graduate study toward a master's or Ph.D. degree in one of the participating science or engineering departments may elect this program in place of the traditional minor. [Note that students wishing to earn a graduate degree in mathematics or computer science should reference these departments' sections of the Graduate Catalog for details on options available in computational mathematics and scientific computing.] To complete the program requirements, a student must successfully complete a sequence of graduate-level applied mathematics and computer science courses and, if a research dissertation is required, utilize advanced computational techniques in the course of conducting the research.

The Computational Engineering and Sciences Program is designed to efficiently prepare graduate students to undertake research utilizing scientific computing by combining course work in applied mathematics and computer science in addition to course work in the traditional major. The program recognizes that the area of scientific pursuit, numerical simulation, has emerged as a new paradigm for scientific inquiry complementing theory and laboratory experiment. Typical areas of research include, but are not limited to, computational fluid dynamics, molecular dynamics, radiation transport, quantum chemistry and atmospheric modeling. Admission to the program is gained after enrollment in the Graduate School and the graduate program is underway. Program course requirements are selected from applied mathematics and computer science courses listed elsewhere in this Graduate Catalog. Typical courses that may be selected to satisfy this program's requirements include numerical analysis, numerical linear algebra for parallel architectures, stochastic simulation, computer operating systems, digital systems architecture, computer graphics, compiler construction, software engineering, and design and analysis of algorithms.

Ecology (Minor Program)

Rebecca Irwin, Coordinator

NCSU Box 7617 Phone: 919.513.7553 Fax: 919.515.5327

E-mail: reirwin@ncsu.edu

Ecology is the science concerned with the interactions of organisms with each other and with their environment. It is an integrative science through which one gains an understanding of biological and physical interrelationships and predicts the consequences of altering one or several components. Students in a number of basic and applied curricula may elect to minor in ecology at the M. S. and Ph.D. levels. The minor provides an opportunity for a broad overview of the science of ecology.

The ecology minor is an interdepartmental program drawing faculty from the Departments of Applied Ecology, Biological Sciences, Crop and Soil Science, Entomology and Plant Pathology, Forestry and Environmental Resources, Marine, Earth and Atmospheric Sciences, Parks, Recreation and Tourism Management, Plant and Microbial Biology, and Statistics. The Director of the Biology Graduate Program (DGP) administers the Ecology minor.

Requirements for a Minor in Ecology

A graduate student's advisory committee must include one member who conducts research in Ecology. This committee member must be from a department other than that of the chairman of the student's committee and should be chosen in consultation with the Ecology minor DGP.

M.S. minor: A minimum of 9 credit hours of approved Ecology graduate courses, including AEC 502 and AEC 503. The remaining courses can be chosen in consultation with the Ecology minor DGP and must be outside the student's major discipline.

Ph.D. minor: A minimum of 12 credit hours of approved Ecology graduate courses, including AEC 502 and AEC 503. The remaining courses can be chosen in consultation with the Ecology minor DGP and must be outside the student's major discipline. No courses used to meet the Ecology minor requirements for the M.S. degree may be used to meet the Ph.D. minor requirements.

Environmental Remote Sensing and Image Analysis (Minor Program)

Dr. Siamak Khorram NCSU Box 7106 Phone: 919.515.2868

Email: khorram@ncsu.edu

This graduate minor provides graduate students the opportunity to develop a recognized academic credential in remote sensing and image analysis in conjunction with their major program of graduate study. A minimum of 12 credit hours, 6 credit hours of required courses and 6 credit hours of elective courses, is required to complete the minor.

Prerequisite: Graduate status (non-Option B).

Course Requirements: Students must complete a total of 12 credit hours (6 hours from required courses and 6 hours from electives). See the <u>Remote Sensing Minor</u> website for more details.

Other Requirements: A GIST faculty member must be on the student's graduate committee. A list of currently approved faculty members can be provided to students upon request. If no graduate committee is required by the student's program, the student must obtain approval of his or her minor program. Students enrolled in Option B Masters programs are not eligible to declare a minor. Certificate coursework and Minor coursework must be completely independent

Food Safety (Minor Program)

GRADUATE FACULTY

William Neal Reynolds Professor Lee-Ann Jaykus, Director

Email: leeann jaykus@ncsu.edu

The primary objective of the Food Safety minor is to prepare science professionals with the depth and breadth of training necessary to understand and to control food safety challenges. The minor is directed in the Department of Food, Bioprocessing and Nutrition Sciences with participation by other departments in the Colleges of Agriculture and Life Sciences and Veterinary Medicine. However, it is open to all students having a science background that includes the disciplines of microbiology, biochemistry and molecular biology, and statistics. It is highly desirable that formal course training in food microbiology and/or preservation be part of each student's academic program, either before or concurrent with courses in the minor. Graduate students earning the minor are required to complete all 10 credits from the core courses listed below.

CORE COURSES

FSA 520 Pre-harvest Food Safety

FSA (FS) 530 Post-harvest Food Safety

FSA (FS) 540 Food Safety and Public Health

FSA (FS) 580 Professional Development and Ethics in Food Safety

Genetic Engineering and Society (Minor Program)

Professor F. Gould, co-Director 1552 Thomas Hall

Phone: 919.515.1647 Email: fgould@ncsu.edu

Professor J. Delborne, co-Director

5221 Jordan Hall Addition Phone: 919.515.0106 Email: jadelbor@ncsu.edu

AgBioFEWS home page: https://research.ncsu.edu/ges/academics/agbiofews/

Overview: The interdisciplinary minor in Genetic Engineering and Society (GES) examines the technological, societal and ecological issues surrounding the development and potential use of genetically engineered organisms. Participants in the minor will learn the basic concepts and principles underlying genetic engineering and the methods used for evaluating the technology's social, cultural and environmental dimensions. The graduate minor is available to students pursuing either an MS or a PhD degree.

Requirements: In order to complete the minor, coursework must be taken in relevant areas of natural sciences and the humanities and social sciences. 9 credit hours from a list of approved courses (see below) are required, 6 of which must be the two core GES courses. The remaining 3 credit hours must be fulfilled by a course from the list of approved courses that is outside the students' home discipline. A grade of B or higher must be achieved in each course counted towards the minor. In addition, a student must have a GES faculty member on his or her committee (see GES program homepage for a list of the GES faculty), and this faculty member should be from a discipline other than the student's major, ensuring that there is representation from both humanities/social science and natural science.

The choice of courses must be consistent with the interdisciplinary outlook of this minor, namely that students will learn the basic concepts and principles underlying genetic engineering and the methods used for evaluating the technology's social, cultural and environmental dimensions. The minor representative will be responsible for ensuring that the courses taken are appropriate and balance the student's major. Students in the biological sciences will be encouraged to take hands on courses, such as those offered by the BIT program.

Approved courses

Core courses:

GES/ENT 506 (3 CR) Principles of Genetic Pest Management GES/COM 508 (3 CR) Emerging Technologies and Society GES 591 (3 CR) Governance, Systems and Modeling

Other approved courses:

ANT 550 Culture, Ecology, and Sustainable Living

BIT 410/510 Manipulation of Recombinant DNA

COM 536 Seminar in Environmental Communication

ECG 540 Economic Development

ENG 515 Rhetoric of Science and Technology

FW 411/511 Human Dimensions of Wildlife Management

GN 735 Genomic Science

HI 540 Topics in Environmental History

HI 581 History of the Life Sciences

HI 585 History of American Technology

NR 571 Current Issues in Natural Resource Policy

REL 571 Darwinism and Christianity

PA 598/798 Science and Technology Policy PHI 475/575 Ethical Theory PSY 757 Innovation and Technology ST 590 A,C Bioinformatics I/II

Additional courses may be added to the approved list, as determined by the Executive Committee. Courses may be substituted at the Co-Directors' discretion.

Geographic Information Systems (Minor Program)

Dr. Eric Money Center for Geospatial Analytics NCSU Box 7106

Phone: 919.513.0408 Email: esmoney@ncsu.edu

Website: https://cnr.ncsu.edu/geospatial/academics/programs

The Geographic Information Systems (GIS) minor provides an academic credential for students who have developed some GIS application skills while pursuing a graduate degree in another discipline. It is designed for students who wish to master the basics of GIS analysis and to develop more advanced skills in a particular application area.

Prerequisite: Graduate status (non-Option B).

Course Requirements: Students must complete a total of 9 credit hours (6 hours from required courses and 3 hours from electives). See <u>GIS minor website</u> for course details.

Other Requirements: A GIST faculty member must be on the student's graduate committee. A list of currently approved faculty members can be provided to students upon request. If no graduate committee is required by the student's program, the student must obtain approval of his or her minor program. Students enrolled in Option B Masters programs are not eligible to declare a minor. Certificate coursework and Minor coursework must be completely independent.

Interdisciplinary Minor

The interdisciplinary minor requires two or more areas of coursework to be represented with a faculty member representing one of the areas of coursework. Students who are interested in an interdisciplinary minor should contact their Directors of Graduate Programs for more information.

Plant Physiology (Minor Program)

GRADUATE FACULTY

Professor T. W. Rufty Jr., Coordinator NCSU Box 7620 919.515.3660

Email: tom_rufty@ncsu.edu

The plant physiology program is an interdepartmental offering. Although not a formal degree program, students may elect to major or minor in the plant physiology program at both the M.S. and Ph.D. levels. Students entering the program should have appropriate knowledge in plant biology, biochemistry, mathematics and physics. Some formal training in genetics and statistics is normally expected.

When majoring in plant physiology, students will be closely affiliated with the same department as their major professor. As such, they will be required to meet respective departmental requirements for teaching, written and oral examinations, and seminar attendance. Departments currently participating in this program are: Biochemistry, Botany, Crop Science, Forestry, Genetics, Horticultural Science, Plant Pathology, and Soil Science. The chair or co-chair of the student's advisory committee must be a member of the Plant Physiology Faculty.

The purpose of the plant physiology curriculum is to ensure that students obtain substantive understanding of the physiological processes controlling plant behavior. The course requirements for graduate students are set by each graduate committee. Advanced knowledge is expected in biochemistry, plant physiology, plant structure and function, and molecular biology.

Water Resources (Minor Program)

Josh Heitman, Chair Soil Science 3410A Williams Hall NCSU Box 7619 Phone: 919.513.1593

Email: <u>ilheitman@ncsu.edu</u>

The interdisciplinary, interdepartmental graduate minor in water resources is designed for students majoring in the many disciplines of natural resources, science, engineering, technology, and social sciences that are relevant to water resources. The minor exposes students to water resources courses and faculty members within and outside their major fields of study.

The graduate minor in water resources (WR) requires successful completion ("B-" or better in each individual WR course, GPA of 3.0 or better across all WR courses counted toward the minor) of at least 9 credits of WR courses chosen from the lists below. At least 3 of the 9 credits (for M.S. students) or 6 of the 9 credits (for Ph.D. students) must be from outside the student's major department. For M.S. students (not Ph.D. students), up to 3 credits at the 400-level may be included if these credits are from outside the student's major department. For students earning an M.S. before enrolling in a Ph.D. program, courses taken to satisfy a WR minor in the M.S. program can not be counted toward a WR minor in the subsequent Ph.D. program. However, WR courses taken during the M.S. program may count toward a WR minor in the subsequent Ph.D. program if the M.S. program did not include a WR minor.

WATER RESOURCES COURSES

Hydrological and Meteorological Aspects of Water Resources

BAE 502 Instrumentation for Hydrologic Applications

BAE 570 Soil Water Movement

BAE 576 Watershed Monitoring and Assessment

BAE 577 Introduction to the Total Maximum Daily Load Program

BAE 579 Stream Channel Assessment and Restoration

BAE 581 Open Channel Hydraulics for Natural Systems

BAE 583 Ecohydraulics and River Corridor Function

BAE 584 Introduction to Fluvial Geomorphology

BAE(SSC) 771 Theory of Drainage-Saturated Flow

CE 584 Hydraulics of Ground Water

CE 586 Engineering Hydrology

CE 607 Water Resource and Environmental Engineering Seminar

FOR(NR) 420/520 Watershed and Wetlands Hydrology

MEA 455 Micrometeorology

MEA 481 Principles of Geomorphology

MEA 485 Introduction to Hydrogeology

MEA 513 Radar Meteorology

MEA 585 Physical Hydrogeology

MEA 706 Meteorology of the Biosphere

MEA 715 Dynamics of Mesoscale Precipitation System

SSC 470/570 Wetland Soils

SSC 511 Soil Physics

Water Quality Aspects of Water Resources

BAE 473 Introduction to Surface/Water Quality Modeling

BAE(SSC) 573 Introduction to Surface Hydrologic/Water Quality Modeling

MEA 760 Biogeochemistry

MEA 763 Geochemistry

MEA 785 Chemical Hydrogeology

SSC 442 Soil and Environmental Biogeochemistry

SSC 521 Soil Chemistry

SSC 722 Advanced Soil Chemistry

Water Engineering and Management Aspects of Water Resources

BAE 471 Land Resources Environmental Engineering

BAE 472/572 Irrigation and Drainage

BAE 574 DRAINMOD: Theory and Application

BAE 575 Design of Structural Stormwater Best Management Practices

BAE 578 Agricultural Waste Management

BAE 580 Introduction to Land and Water Engineering

CE 484 Water Supply and Waste Water Systems

CE 571 Physical Principles of Environmental Engineering

CE 574 Chemical Principles of Environmental Engineering

CHE 575 Advances in Pollution Prevention: Environmental Management

CS(HS,SSC,TOX) 725 Pesticide Chemistry

CS(HS,SSC,TOX) 727 Pesticide Behavior and Fate in the Environment

NR 521 Wetland Assessment, Delineation, and Regulation

PCC 401 Manufacturing and its Impact on Safety, the Environment, and Society

SSC 562 Environmental Applications of Soil Science

WPS 725 Pollution Abatement in Forest Products Industries

WPS 750 Wastewater Treatment in the Paper Industry

Biological and Ecological Aspects of Water Resources

BIO 441 Biology of Fishes

BIO 442 Biology of Fishes Laboratory

FOR 595 Mountain Ecohydrology

FW(BIO) 420 Introduction to Fisheries Science

FW(ZO) 586 Aquaculture I

FW(ZO) 587 Aquaculture I Laboratory

MEA 756 Ecology of Fishes

PB(ZO) 760 Principles of Ecology

PB(MB) 774 Phycology

SSC 461 Soil Physical Properties and Plant Growth

ZO 519 Limnology

Legal, Institutional, and Economic Aspects of Water Resources

EC(ARE) 436 Environmental Economics

ECG 515 Environmental and Resource Policy

ET 460 Practice of Environmental Technology

LAR 430 Site Planning

LAR 512 Landscape Resource Management

NR 460 Renewable Natural Resource Management and Policy

NR 571 Current Issues in Natural Resource Policy

NR 484 Environmental Impact Assessment

PA 550 Environmental Policy

Women's and Gender Studies (Minor Program)

Karey Harwood, PhD Coordinator, Women's and Gender Studies Associate Professor Department of Philosophy and Religious Studies

Phone: 919-515-6383

Email: <u>karey_harwood@ncsu.edu</u>

The minor provides graduate students in the humanities, social sciences and sciences with the theories and the methodologies to study women and gender relations. The minor is intended to support and further students' research in their own field.

- Nine hours of graduate credit are required with a B or better in each course.
- No more than three hours of course work may overlap between the major department coursework requirement and the Women's and Gender Studies minor. Students may choose from the courses listed on the website and/or a list of approved special topics courses.
- Because the Minor is an interdisciplinary one, at least one of the courses needs to be in a field different from that of the graduate program in which the student is enrolled.
- All courses must be taught by the Women's and Gender Studies Affiliated Faculty.
- An Affiliated Faculty member (not in the field of the degree graduate program) must sit on the master's or dissertation committee.

The Administration and Leadership certificate is closed to new student enrollment. Please visit the Department of Youth, Family, and Community Sciences website for information on our current certificate offerings.

The Department of Youth, Family, and Community Sciences (YFCS) at North Carolina State University is proud to offer graduate distance education programs designed to prepare and strengthen current and future professionals. The Youth, Family, and Community Sciences online programs create and advance the careers of those who work with youth and/or families in community-based settings.

Admissions: Students apply online at http://www.ncsu.edu/grad/applygrad.htm.

Requirements: A Graduate Certificate in Administration and Leadership – Family and Youth Programs requires a total of 12 credit hours. Nine (9) credit hours are required courses, with the remaining 3 credit hours of electives. All courses are offered online only.

Required Courses (9 credit hours)

FYD 550 Youth and Family Professionals as Leaders FYD 554 Collaborations and Partnerships in Youth and Family Settings FYD 556 Organizational Systems in Youth and Family Settings

Electives (3 credit hours)

Approved course in Family Life and Youth Development (FYD)

The Department of Agricultural and Extension Education offers a Graduate Certificate in Agricultural and Extension Education. The program focuses on developing knowledge and skills needed to be effective teachers of agriculture in the public schools and community colleges or to work as an educator with the Cooperative Extension Service or in other non-formal educational settings such as public gardens, nature centers and in international development. Admissions: Students apply online by visiting the Graduate School's website and completing an ApplyYourself online application. Students currently in a graduate degree program should contact the program director for information regarding adding the certificate program to an existing degree program.

Requirements: The certificate program involves completion of 15 credit hours and the preparation of a professional portfolio. The career goals of the student will determine which sequence of courses to take.

Agricultural Education Focus	Extension Education Focus
AEE 500 Agricultural Education, Schools and	AEE 501 Foundations of Agricultural and
Society	Extension Education
AEE 501 Foundations of Agricultural and	AEE 521 Program Planning in Agricultural and
Extension Education	Extension Education
AEE 503 Youth Program Management	AEE 523 Adult Education in Agriculture
AEE 522 Occupational Experience in Agriculture	AEE 533 Leadership and Management of
	Volunteers in Agricultural and Extension
	Education
AEE 524 Coordinating the High School	AEE 560 Organizational and Adminstrative
Agricultural Education Program	Leadeship in Agricultural and Extension
	Education
AEE 529 Curriculum Development in	AEE 577 Evaluation in Agricultural and
Agricultural and Extension Education	Extension Education
AEE 535 Teaching Agriculture in Secondary	AEE 705 International Agricultural Development
Schools	
AEE 641 Practicum in Agricultural and	AEE 641 Practicum in Agricultural and
Extension Education	Extension Education
AEE 735 Effective Teaching in Agriculture and	
Life Sciences	

Students who are are interesting in obtaining teacher licensure from the state of North Carolina should make their intentions known to the program director so that specific state requirements are met. Directions for preparing the professional portfolio can be obtained from the program director.

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In the Graduate Certificate in Applied Statistics and Data Management, students will learn statistical methods and how to apply them in real world settings and about statistical programming techniques that are required for managing data in a typical workplace environment. The skills learned are critical in many work settings and should enable job changes within or between companies. The course requirements for this graduate certificate are:

- Statistical Methods I: ST511 (or ST513)
- Statistical Methods II: ST512 (or ST514)
- Statistical Programming I (Basic SAS): ST555
- Statistical Programming II (Advanced SAS): ST556 or Data Science for Statisticians (Taught using R): ST558

Admissions: The application process is very simple, there are no official prerequisites except for an undergraduate degree. Applicants should demonstrate an appropriate level of mathematical maturity to allow them to succeed in the certificate program. Examples of this would include successful completion of undergraduate coursework or professional work in a quantitative field. Note that the GRE is not required to apply and we only accept students living in North America.

Requirements: The certificate will be earned by successful completion of four courses listed above with an average GPA of at least 3.0.

The Graduate Certificate in Biology for Educators will provide additional training in biological sciences to K-12 teachers and other educators. The certificate will provide recognition to those individuals who complete 12 credit hours of coursework in graduate level biology, with the option to complete up to 18 credit hours for those interested in teaching AP courses or teaching at the community college level (dependent on individual community college credential requirements). All students will choose between four and six courses (3 credits each) in topic areas that align with their own goals, including a capstone course in the science of learning. Course topics will include animal behavior, communicable and non-communicable diseases, toxicology, evolution, genetics and microbiology. Faculty are continuing to develop new courses to increase options.

The Graduate Certificate in City Design is a joint program between the School of Architecture and the Department of Landscape Architecture. In addition, the Graduate Certificate in City Design is an interdisciplinary and inter-university initiative, reflecting the nature of city design practice. The program aims to bring together students and faculty from landscape architecture, architecture, and city and regional planning into an interactive and team-based learning context.

The City Design program promotes design inquiry and application at the scale of the city for students and practitioners of architecture, landscape architecture, and city and regional planning. The program's objectives are to consider the human condition, particularly in making signification urban places; design integrated system of movement with increased accessibility; promote a greater mix of uses and amenities within a well-scaled urban fabric; foster new opportunities for energy production, collection and saving at the local scale; define new means of 'greening' the city; and capture greater senses of identity, meaning, and quality within the city fabric.

Admissions: Applicants must complete an application form to be considered for the certificate program. To qualify for admission to the certificate program, students must be enrolled in (or have completed) a professional program in architecture. At the time of application, students must have a 3.00 grade point average (GPA) in their professional degree program.

Requirements: Students must complete 15 hours of coursework from the course menu, as specified in the certificate application, and have a minimum of 3.00 GPA on all certificate coursework. All grades on courses taken towards the certificate program in courses numbered 400 and above are included in the GPA. Courses at the 300 level and below are not eligible for certificate credit and subsequently do not affect the graduate GPA.

The minimum grade to receive certificate credit can be no lower than B-. Students who take letter-graded 400-, 500-, and 700-level courses do not have the option of taking the courses for 'credit only' if they intend for the course to be part of the graduate certificate. Transfer credit from other institutions is not allowed for the graduate certificate. All course work must be registered through NC State University.

All certificate requirements must be completed within four (4) calendar years, beginning with the date that the student commences courses applicable to the certificate, unless a more restrictive time limit has been established by the program or academic college/school.

A student may obtain more than one certificate. Each certificate must have a least nine (9) credit hours that are unique to it.

Other Information: Students in City Design certificate program will join an academic and professional community that offers a broad range of extracurricular activities, including the College of Design annual Urban Design Conference, visiting lecturers, colloquia, and *City Forum*, a regularly scheduled series of brown bag discussions coordinated by the City of Raleigh Urban Design Center.

Note that academic success might have a strong bearing on admission to a degree program, but completion of the certificate program in no way guarantees entry into a graduate degree program. For more information regarding course requirements and the application process, please contact the certificate program coordinator.

The Graduate Certificate in Climate Adaptation program at NC State University provides accredited, academic training in the emerging field of climate adaptation. The online, twelve credit program is designed to provide mid-career professionals and entry-level students with technological skills and specialization in climate adaptation. The certificate is a fully accredited credential and a potential path toward the Climate Adaptation degree program. Coursework includes Fundamentals of Climate Change Science, Climate Risk Analysis, Climate Communication and Introduction to Geographic Information Systems.

Admission Requirements: Applicants must meet one of the 3 following requirements:

- Be a graduate of an accredited four-year college or university, and have a GPA of at least 3.0 on a 4-point scale in their last 60 credit hours of undergraduate study.
- Have a Master's degree.
- Be a degree student in good standing in a NC State University graduate program.

We recommend that students in a NC State University graduate program may apply after completing two of the courses required for the graduate certificate program with at least B grades. The graduate certificate program Director will manage the admissions process in consultation with the MEAS Director of Graduate Programs.

Provisional Admission: Applicants who do not meet the graduate certificate program requirements for full admission may be admitted provisionally based on the quality of their letters of recommendation and other criteria at the discretion of the Certificate Program Director and MEAS Director of Graduate Programs. Students who are admitted provisionally must maintain a 3.0 GPA in order to obtain full admission into the certificate program.

Program of Study: The graduate certificate requires a minimum of 12 hours, and includes the following courses:

- MEA 517 Fundamentals of Climate Change Science
- MEA 518 Climate Risk Analysis
- MEA 519 Barriers to Climate Change Literacy
- GIS 510 Introduction to Geographic Information Science

The Graduate Certificate in Consumer Textile Product Design and Development (GCCTPDD), offered by the Department of Textile and Apparel, Technology and Management, will provide NC State graduate students the opportunity to develop recognized academic credentials in Consumer Textile Product Design and Development in addition to their major area of graduate study. Also it will offer non-degree graduate-level students the opportunity to develop recognized advanced expertise in Consumer Textile Product Design and Development.

Applications: New applicants to the university must submit a Program Application, a resume identifying educational preparation and work experiences, and official transcripts of all undergraduate and graduate course work. You must apply online through the Graduate School application portal. Prior to completing the first course after being accepted into the program, students prepare and submit two copies of a contract using the Certificate Contract Application. The contract includes a statement of career goals, a rationale for completing the certificate program, and a timeline for certificate completion. Students can always elect to review their application with the Certificate Coordinator prior to contract preparation.

Academic Requirements: Applicants must meet one of the three following requirements:

- Be a graduate of an accredited four-year college or university, and have a GPA of at least 3.0 on a 4-point scale in their last 60 credit hours of undergraduate study;
- Be a degree student in good standing in an NC State University graduate program;
- Have a Master's degree.

Program of Study: The Graduate Certificate in Consumer Textile Product Design and Development requires a minimum of 15 hours, and includes the following courses:

Core Courses (6 hours)

TTM 580 Consumer Perspectives in Fashion (3 hours)

TTM 585 Market Research in Textiles (3 hours)

Advanced Courses (minimum 9 hours)

TTM 515 Apparel Production (3 hours)

TTM 517 Advanced Computer-Aided-Design for Fashion (3 hours)

TT 570 Textile Digital Design and Technology (3 hours)

TT 571 Professional Practices in Textile Design and Technology (3 hours)

TTM 510 Apparel Technology Management (3 hours)

TTM 632 Independent Study in Consumer Textile Product Design and Development (3 hours)

For more details about the Graduate Certificate in Consumer Textile Product Design and Development, please visit the <u>program website</u>.

Graduate Certificate Program (online): Our innovative online program prepares school teachers, administrators, staff, advisors, tutors in schools and universities, human service workers, and individuals interested in counseling work to advocate and support students, their families, clients and local communities. Our certificate program allows students to learn in a flexible environment, with flexible online classwork, without the hassle of traffic and on-campus parking. Students will meet online each week for a 90-minute interactive discussion with the professor, instructors and classmates, in order to stay connected and challenged. The certificate program alone does not prepare students to work as professional counselors. In order to work in professional counseling, additional classes, training and licensure will be required through a master's degree program.

Admission Requirements: Applicants should have a 3.0 GPA but may be admitted provisionally based on related graduate classes completed in the field of education, human services or training and development, and, ultimately, by earning at least a "B" (3.0) average in the first GCCE class.

- Completed online Graduate School application and admission fee
- Resume outlining education and work experience

Admission to the GCCE online program takes place in the spring for a summer start. Rolling base admissions are possible if seats are available. Email us at ncsu.edu with any questions.

Graduate Certificate in Counselor Education Requirements: Students admitted to this program are required to complete four online courses: ECD 510 Orientation to Professional Counseling, Identity, and Ethics, ECD 530 Theories of Counseling, ECD 524 Career Counseling, and ECD 525 Multicultural Counseling.

The Department of Biological and Agricultural Engineering offers a Graduate Certificate Program in Design and Analysis of Environmental Systems: Watershed Assessment and Restoration.

Objectives

- 1. Provide a focus and formal program for students from many disciplines to pursue training in the technical and engineering aspects of designing and analyzing environmental systems with an emphasis on the watershed-scale.
- 2. Provide students the opportunity to develop a solid foundation in engineering systems targeted at environmental issues, particularly related to non-point sources and their impact on water quality at the watershed-scale.
- 3. Provide practicing engineers and other professionals a source of graduate level engineering education in the environmental field.

Admission Requirements: Applicants must have successfully completed an accredited undergraduate engineering program with a GPA of 3.0 (based on a 4.0 scale), or with an overall undergraduate GPA of at least 2.8 coupled with a 3.0 or higher in the undergraduate major, or be currently enrolled in a graduate engineering program. Applicants with a four-year undergraduate science degree who have successfully completed (with a C or better) calculus, differential equations, physics and chemistry will also be considered. A program that includes fluid mechanics or hydraulics is highly recommended. Environmental professionals who do not meet the above criteria may also qualify if appropriate experience can be demonstrated.

Program Requirements: A minimum of 12 hours of coursework selected from the list below. One course can be selected from outside of BAE (up to 2 credit hours), but at least 9 credit hours must be BAE courses.

At least 9 hours from the following:

- BAE 502 Instrumentation for Hydrologic Applications
- BAE 528 Biomass to Renewable Energy Processes
- BAE 535 Precision Agriculture Technology
- BAE 573 Hydrologic and Water Quality Modeling
- BAE 574 Drainmod
- BAE 575 Design of Structural Stormwater Best Management Practices
- BAE 576 Watershed Monitoring and Assessment
- BAE 578 Agricultural Waste Management
- BAE 579 Stream Channel Assessment and Restoration
- BAE 580 Introduction to Land and Water Engineering
- BAE 581 Open Channel Hydraulics for Natural Systems
- BAE 582 Risk and Failure Assessment of Stream Restoration Structures
- BAE 583 Ecohydraulics and River Corridor Function
- BAE 585 Integrating AutoCAD, Civil3D, and GIS
- BAE 590 Introduction to Fluvial Geomorphology
- BAE 590 GIS Applications in Precision Agriculture
- BAE 590 Wetland Design
- BAE 590 Water / Nutrient Management for Sustainability
- BAE 590 Biogeochemical Processes
- BAE 771 Theory of Drainage Saturated Flow
- BAE 774 Theory of Drainage Unsaturated Flow

Up to 3 credit hours can be selected from the following:

- CE 580 Flow in Open Channels
- CE 584 Hydraulics of Groundwater
- CE 586 Engineering Hydrology
- CE 775 Modeling and Analysis of Environmental Systems
- CE 776 Advanced Water Management Systems
- CE 784 Ground Water Contaminant Transport
- CE 785 Urban Stormwater Management
- SSC 511 Soil Physics
- SSC 562 Environmental Applications of Soils
- SSC 570 Wetland Soils

The Certificate in Digital Humanities is a designed for students from any discipline to construct a curriculum in digital humanities training and project work. The certificate is currently coordinated in the English department with participation across CHASS and other colleges.

The Graduate Certificate consists of a student-proposed curriculum of four 3-credit courses which must collectively satisfy the program's three requirements: contexts, training, and applications. In consultation with the coordinator, students can propose their own tracks through the certificate drawing from a broad array of approved courses at NC State as well as at UNC and Duke, as part of the Triangle Digital Humanities Network. Rather than insisting on a prescriptive definition and preset curriculum for "digital humanities," this certificate program encourages students to adapt course offerings in digital humanities or digital media to their own evolving research and professional interests in any variety of fields.

To qualify for admission to the Graduate Certificate in Digital Humanities, students must be enrolled in, or have completed, a Master's or PhD program at an accredited university. Applicants can be either non-degree or degree students. Degree students must have at the time of application a 3.00 grade point average in their graduate degree program. Non-degree students must have a final grade point average that is at least 3.00. Current degree students in English or CRDM may include no more than six (6) credits from the Certificate program in their degree program. Current degree students in History can apply up to nine (9) towards a doctorate. Students seeking the certificate from other programs must consult with those graduate coordinators to confirm allowed credits toward degree. The certificate will accept up to three hours of transfer credit from courses included in the curriculum. All GCP requirements must be completed within three (3) calendar years beginning on the date the student commences applicable courses.

Curriculum: Courses from which applicants can develop a proposal for admission to the program.

NC State University:

Department of English, CHASS

ENG 506 Verbal Data Analysis

ENG 519 Online Information Design and Evaluation

ENG 582 Introduction to Digital Humanities

ENG 583 Digital Media Theory *

ENG 583 Introduction to Humanities Physical Computing *

ENG 583 Emerging Genres

ENG 584 Studies in Linguistics: Laboratory and Computational Tools

CRD 702 Rhetoric and Digital Media

Department of History, CHASS HI 534 History and Digital Media HI 599 The Practice of Digital History

Department of Communication, CHASS COM 537 Gaming and Social Networks COM 547 Mobile Technologies and Social Practices

Department of Computer Science, COE**
CSC 116 Introduction to Computing - Java
CSC 281 Foundations of Interactive Game Design

Department of Art + Design, COD

ADN 419 Multimedia and Digital Imaging***

ADN 423 Digital Modeling

ADN 502 Advanced Visual Laboratory***

ADN 503 Graduate Seminar in Art and Design

ADN 561 Digital Animation and Imaging Seminar***

College of Education (CED)

ECI 511 Computer Applications and Curriculum Integration

ECI 512 Emerging Technologies for Teaching and Learning

ECI 513 Teaching and Learning with Digital Video

ECI 514 Multimedia Design and Applications in Instruction

ECI 515 Online Collaborations in Education

ECI 516 Design and Evaluation of Instructional Materials

ECI 546 New Literacies and Media

ECI 717 Advanced Multimedia Design and Applications in Instruction

- * These special topics courses will be turned into permanent courses this spring, 2013-14.
- ** Courses at the 200-level cannot count toward the certificate's credit hours but may be elected.
- *** These courses have prerequisites in the College of Design: ADN 419 requires D105 and ADN 219; ADN 561 requires AND 460 and ADN 419.

Additional courses available at UNC Chapel Hill:

School of Information and Library Sciences (SILS)

INLS 490 Usability Engineering

INLS 512 Applications of Natural Language Processing

INLS 613 Text Mining

INLS 720 Metadata

INLS 740 Digital Libraries

INLS 890 Making the Humanities Digital

Journalism & Mass Communication

JOMC 491 Mobile App Design and Development

JOMC 581 Multimedia Design

JOMC 582 Interactive Multimedia Narratives

JOMC 583 Multimedia Programming and Production

JOMC 584 Documentary Multimedia Storytelling

JOMC 585 3D Design Studio

JOMC 586 Intermediate Multimedia

American Studies

AMST 840 Digital Humanities/Digital History

AMST 850 Digital Humanities Practicum

For course descriptions, please refer to the NCSU listing of courses.

For further information, see the **DH** certificate website.

Graduate students and working professionals can now earn a new credential to kick-start or advance their career in the biopharmaceutical industry. Applications are currently being accepted for two new BTEC graduate certificate programs. The Downstream Biomanufacturing graduate certificate offers NC State graduate students and working professionals the opportunity for hands-on learning in BTEC's industry-scale simulated cGMP facilities.

Each certificate requires 12 hours of graduate coursework, which can be transferred to the Master of Biomanufacturing program. The majority of BTEC's graduate courses are offered in the evening or online to better accommodate working professionals.

Admission Requirements: Applicants must apply to the Graduate School http://www.ncsu.edu/grad/applygrad.htm. Those applicants who are currently enrolled in an NC State graduate program need only provide the Graduate Student Certificate Plan Data Entry forms, http://ncsu.edu/grad/faculty-and-staff/docs/grad-cert-plan-data-entry.pdf. An application for acceptance into a certificate programs is required for all new applicants once the student has:

- 1. either have graduated with a baccalaureate degree in a science or engineering discipline with a minimum GPA of 3.0 or
- 2. have complete one or more 500+ level BEC courses which satisfy the certificate requirement with a grade of B- or better on the first enrollment in every course completed.

Certificate Degree Requirements: To earn the Graduate Certificate in Downstream Biomanufacturing, students must complete the following list of core courses and complete a minimum total of 12 credit hours. The grade in each course for the Certificate must either be B- or higher, or CR (600-level courses only), and the over-all GPA for the Certificate courses must be 3.00 minimum.

Transfer credit from other institutions will not be allowed for the Certificate. All course work must be registered through NC State University.

Required Unique Courses (9 credits total)

BEC 532 Biological processing science (2 credits)

BEC 536 Introduction to downstream process development (2 credits)

BEC 585 cGMP downstream operations (2 credits)

BEC 575 Global Regulatory Affairs (3 credits)

Additional Courses (Minimum 3 credits total)

MBA 554 Project Management (3 credits) or ISE 589 Project Management for Engineers (3 credits)

BEC 577 Advanced Biomanufacturing and Biocatalysis (3 credits)

BEC 515 Biopharmaceutical Product Characterization Techniques (2 credits)

CHE 752 Separation Processes for Biological Materials (3 credits)

The certificate in Downstream Biomanufacturing requirements must be completed within four (4) calendar years, beginning with the date the student commences courses applicable to the Certificate. Students who complete the certificate in Downstream Recovery and Purification may obtain more than one certificate. However, each certificate must have at least nine (9) hours which are unique to it.

Other Relevant Information: A unique, cross-disciplinary instructional center, the Golden LEAF Biomanufacturing Training and Education Center (BTEC) provides educational and training opportunities to develop skilled professionals for the biomanufacturing industry and create the best-trained, most industry-focused workforce possible.

The Graduate Certificate in Energy and Technology in Architecture provides students the opportunity to focus their elective studies through courses and design studio(s) that concentrate on building energy systems along with other building systems.

The program's objectives are to provide educational opportunities for architecture graduate students who wish to acquire knowledge and skills in the design and operation of building system at site and building levels, with an emphasis on energy and materials; to advocate for the importance of energy efficiency over the entire life cycle of a building; and to make our students more competitive in the fields of architectural practice, building engineering, and construction.

This certificate program also provides unique interdisciplinary academic and research opportunities among the College of Design, programs within the College of Engineering, NC Solar Center, and building design industries/organizations (i.e. architecture, engineering, general contracting, real estate companies, and public policy agencies).

Admissions: Applicants must complete an application form to be considered for the certificate program. To qualify for admission to the graduate certificate in Energy and Technology in Architecture, students must be enrolled in (or have completed) a professional program in architecture. At the time of application, students must have a 3.00 grade point average (GPA) in their professional degree program.

Requirements: Students must complete 15 hours of coursework from the course menu, as specified in the certificate application, and have a minimum of 3.00 GPA on all certificate coursework. All grades on courses taken towards the certificate program in courses numbered 400 and above are included in the GPA. Courses at the 300 level and below are not eligible for certificate credit and subsequently do not affect the graduate GPA.

The minimum grade to receive certificate credit can be no lower than B-. Students who take letter-graded 400-, 500-, and 700-level courses do not have the option of taking the courses for 'credit only' if they intend for the course to be part of the graduate certificate. Transfer credit from other institutions is not allowed for the graduate certificate. All course work must be registered through NC State University.

All certificate requirements must be completed within four (4) calendar years, beginning with the date that the student commences courses applicable to the certificate, unless a more restrictive time limit has been established by the program or academic college/school.

A student may obtain more than one certificate. Each certificate must have a least nine (9) credit hours that are unique to it.

Other Information: Students in this certificate program will become part of an academic and professional community that offers a broad range of extracurricular activities, including the NC Solar Center GreenBuild Lecture Series, visiting lecturers, and colloquia.

Note that academic success might have a strong bearing on admission to a degree program, but completion of the certificate program in no way guarantees entry into a graduate degree program. For more information regarding course requirements and the application process, please contact the certificate program coordinator.

The graduate certificate program in Environmental Assessment provides students and professionals the opportunity to develop recognized academic credentials and advanced expertise in Environmental Assessment. The certificate program provides excellent opportunities for practicing environmental professionals to stay abreast of new technologies and current government regulations.

The curriculum consists of 12 credit hours selected from the required course listing for the MEA degree. Students may transfer up to 12 credit hours from the Certificate into the Masters of Environmental Assessment (MEA). Students may earn the Certificate as a stand-alone credential or as part of a graduate degree and may apply for entry into the MEA degree while in the Certificate program.

Admission Requirements: Baccalaureate degree. Application information and requirements for award of a certificate are listed on the Environmental Assessment Certificate website. Students can start this certificate in Fall or Spring semesters.

Certificate Requirements: Award of a certificate requires a GPA of 3.0 or better for the certificate courses (required and elective) and a grade of B- or better in all of the certificate courses. See the **Environmental Assessment Certificate** website for a detailed list of courses.

Other Relevant Information: The Certificate is entirely online.

The Youth, Family, and Community Sciences (YFCS) academic program at North Carolina State University is proud to offer graduate distance education programs designed to prepare and strengthen current and future professionals. The Youth, Family, and Community Sciences online programs create and advance the careers of those who work with youth and/or families in community-based settings.

The Youth, Family, and Community Sciences Online Graduate Certificate in *Family Life Education and Coaching* prepares students to work with parents, professionals, and families as a both family life educator and family life coach. **Family Life Coaches** (FLC) help clients through a thought-provoking and creative process that inspires them to maximize their potential, reach goals, and achieve happiness. **Family Life Educators** (FLE) are strengths-based professionals who provide preventative education to families in organized efforts designed to provide information, skills, experiences, or resources intended to strengthen, improve, or enrich their family experience.

Admissions: Students apply online at http://www.ncsu.edu/grad/applygrad.htm

Requirements: A Graduate Certificate in Family Life Education and Coaching requires a total of 12 credit hours. Nine (9) credit hours are required courses, with the remaining three (3) credit hours of electives. All courses are offered online only.

Required Courses (9 credit hours)

YFCS 543 Applied Concepts in Parenting and Family Life Education YFCS 545 Family Communication and Coaching YFCS 547 Family Life Coaching

Electives (3 credit hours)

Approved YFCS Elective in family life education (FLE) content area

The Graduate Certificate Program in Feed Science is designed to prepare professionals or current degree program students to work in the feed industry. The program will provide an advanced foundation in feed science technology, animal nutrition and feed formulation, and feed industry leadership. All courses can be delivered by distance education methods.

The objectives of this program are for the student to acquire an understanding of the technical aspects of modern feed and pet food manufacturing, feed mill operations and leadership, feed and ingredient quality assurance, food chain safety, feed industry regulations, animal nutrition and feed formulation, feed product marketing and strategic planning, and how to apply technical and academic skills to the challenges of the global feed industry.

Admission Requirements: Applicants must have a BS/BA degree or equivalent four year degree in order to apply to the program. Individuals interested in this certificate program must complete the admissions form and send it to the Director of Graduate Programs in Poultry Science.

Program Requirements: A minimum of 12 credit hours from the prescribed list of courses and a grade of 'C-' or better in these courses is required to receive credit for the certificate. To receive a Graduate Certificate in Feed Science, a student must have a minimum 3.0 grade point average on all certificate course work. All course work must be registered through NC State University, transfer credit from other universities is not allowed. All work must be completed in four (4) calendar years, beginning from the time the application is approved by the Director of Graduate Programs.

Required Courses

PO/NTR 515 Advanced Comparative Nutrition (3 cr.) FM/NTR 525 Advanced Feed Science and Technology (3 cr.) FM 580 Feed and Ingredient Quality Assurance (3 cr.)

Optional Courses

FM 460 Feed Mill Operations and Leadership (2 cr.) NTR/FM 790 Advanced Feed Formulation (3 cr.) FM 594 Advanced Feed Mill Practicum (1 cr.) FM 601 Feed Science Seminar (1 cr.)

The Graduate Certificate in Finance is a one to two year program designed for working professionals in the Raleigh and Research Triangle community. They will obtain advanced skills in capital budgeting, managing risk, and asset valuation.

Admissions requirements: For admission requirements, please visit the admissions website.

The Master of Geospatial Information Science and Technology (MGIST) equips students with the necessary knowledge and tools to become high-end geospatial professionals using a unique curriculum that leverages NC State's strengths in computational and data sciences, information technology, and interdisciplinary training in combination with professional skills development in areas of project management, technical writing, and communications. The MGIST can be completed entirely online, allowing flexibility for both students just entering the work force and working professionals.

Through a combination of geospatial theory, hands-on applications, and client-based service-learning experiences, students graduate from the program with a solid foundation to provide a wide range of geospatial expertise for local, state, national, and international organizations.

Admissions Requirements: Admission to the program requires an undergraduate GPA of 3.0 or better, a professional resume, a personal statement describing the applicant's professional ambitions and experience, and 3 letters of reference. Students with less than a 3.0 undergraduate GPA may be considered for provisional admission into the MGIST or referred to the GIS Certificate program to enhance skills and prepare for reapplication to the MGIST.

Master's Degree Requirements: The MGIST degree requires 33 course credit hours including a 3-credit-hour Capstone course and development of a professional portfolio highlighting geospatial analytic skills and competencies. A cumulative GPA of 3.0 or better is required in order to graduate. Specific course requirements are listed on the MGIST web site.

Student Financial Support: Students in this program are eligible for financial aid and may compete for program assistantships and internships.

Other Relevant Information: The GIS program also offers a <u>Graduate Certificate in GIS</u> (12 credit hours). Certificate students may transfer up to 12 credits into the MGIST degree. Students enrolled in other NC State graduate programs may enroll in the Certificate program or in either of the two related minors (<u>GIS or Environmental Remote Sensing</u>).

The <u>Certificate in Horticultural Science</u> is a non-degree program offered through the Department of Horticultural Science at North Carolina State University. The Certificate program is designed to increase personal knowledge and skills for current or future employment in the Horticultural Industry. Students may concentrate in one of three areas: General Horticulture, Food Horticulture and Ornamental Horticulture.

Requirements: The Certificate program requires a minimum of five courses resulting in at least 15 credits to be completed within 4 years. The courses will constitute a cohesive continuing education in Horticultural Science and will be selected by the candidate and the advisor.

Applicant must have a B.S. or higher degree from an accredited four-year college or university and have a GPA of at least 3.0 on a 4.0-point scale.

It is highly recommended that candidates have a major in horticulture, crop science, plant science, plant biology or agricultural education with a plant science emphasis. Applicants who do not meet the GPA requirement may be admitted provisionally based on past work experience as a professional in horticulture or a related field. Supporting documentation of professional experience in horticulture or a related field must be submitted for provisional admission. Students who are admitted provisionally must earn at least a 3.0 GPA average in the first two courses of the certificate program in order to obtain full admission into the program. Certificate students must maintain an average GPA of 3.0 and a minimum grade of C (2.00) in any of the Horticulture Graduate Certificate courses.

Curriculum: The following courses can be used for credit in the Horticultural Science Certificate Program. Please note: Not all courses are offered each semester. Students should consult their advisor and the course catalog for the most up-to-date course listings.

Horticultural Science (DE and on-campus sections)

HS 523 General Viticulture

HS 532 Permaculture

HS 541 Plant Breeding Methods

HS 562 Post Harvest Physiology

HS 550 Special Problems in Horticultural Science (Environmental Nursery Production)

HS 590 Plant Breeding Overview

HS 707 Environmental Stress Physiology

HS 717 Weed Management Systems

HS 790 Diagnostic Criteria for Plant Nutrition

Horticultural Science (On-campus sections only)

HS 502 Plant Disease: Methods and Diagnosis

HS 701 Carbohydrate Metabolism and Transport

HS 704 Plant Nomenclature

HS 705 Physiology of Flowering

HS 706 Fruit Development and Postharvest Physiology

HS 715 Weed Science Research Techniques

HS 716 Weed Biology

HS 718 Biological Control of Weeds

HS 720 Molecular Biology in Plant Breeding

HS 725 Pesticide Chemistry

HS 727 Pesticide Behavior and Fate in the Environment

HS 745 Quantitative Genetics in Plant Breeding

HS 746 Breeding Methods

HS 748 Breeding for Pest Resistance

Any other graduate-level Horticultural Science courses.

Plant Pathology

PP 502 Plant Disease: Methods and Diagnosis

Entomology

ENT 591 Insect Pest Management

Soil Science

SSC 440 Geographic Information

SSC 470/570 Wetland Soils

SSC 532 Soil Microbiology

SSC 551 Soil Morphology, Genesis and Classification

SSC 562 Environmental Applications of Soil Science

Food Science

FS 495 Special Topics in Food Science (Good Manufacturing Practices)

FS 495 Special Topics in Food Science (Sanitation Standard Opt. Proc.)

FS 495 Special Topics in Food Science (Sanitation)

FS 495 Special Topics in Food Science (Hazard Analysis/ Risk Assess.)

FS 495 Special Topics in Food Science (Microbiology / Microbial Hazards)

Agriculture & Extension Education

AEE 501 Foundations of Agriculture & Extension Education

AEE 521 Program Planning in Agriculture & Extension Education

AEE 523 Adult Education in Agriculture

For more information about the Certificate Program and applications materials, please see the <u>Department of Horticultural Science</u> website.

The Youth, Family, and Community Sciences (YFCS) academic program at North Carolina State University offers three graduate distance education programs designed to prepare and strengthen the careers of those who work with youth and/or families in community-based settings.

The Youth, Family, and Community Sciences online Graduate Certificate in *Leadership and Volunteer Management* specifically prepares students to work as leaders in community-based organizations. Students gain a more comprehensive understanding of organizational leadership, as well as an applied understanding of effective management skills. The certificate is intended to enhance a student's work in organizational administration and/or volunteer management including volunteer recruitment, retention, risk management, and recognition.

Admissions: Students apply online at http://www.ncsu.edu/grad/applygrad.htm

Requirements: A Graduate Certificate in Leadership and Volunteer Management requires a total of 12 credit hours. Six (6) credit hours are required courses, with the remaining six (6) credit hours of electives. All courses are offered online only.

Required Courses (6 credit hours)

YFCS 550 Youth and Family Professionals as Leaders YFCS 557 Volunteerism in Youth and Family Settings

Electives (6 credit hours)

Approved YFCS course related to organizational administration Approved YFCS course related to student's career interests The Graduate Certificate in Marketing is a one to two year program designed for working professionals in the Raleigh and Research Triangle community. They will obtain advanced skills in consumer behavior, marketing research, product management, innovation, and relationship management.

Admission requirements: For admission requirements, please visit the admissions website.

The Graduate Certificate Program (GCP) in Materials Science and Engineering (MSE) is designed for working professionals who do not have formal training in MSE, but wish to acquire a basic understanding of materials science to improve their on-the-job experience and knowledge. Most people will enroll in this program as distance education students through the Engineering Online (EOL) office at NC State University. Students can customize their particular certificate programs to focus on specific areas of materials science that interest them.

Program of Study: The MSE GCP requires a total of 12 credit hours, including MSE 500 (3 credit hours) and three MSE elective courses (9 credit hours) selected by the student. MSE 500 is a fast-paced overview of the field of materials science and engineering and is designed for students who do not have a formal background in MSE, such as those with BS degrees in chemistry, physics and other fields of engineering. MSE 500 also provides the foundation for more specialized MSE graduate courses.

The courses available to students in the MSE GCP are shown here (https://www.mse.ncsu.edu/grads/mmse/course-schedule). Each course is 3 credit hours and most courses are offered at least once per year through the EOL office. By judicious selection of elective courses, students can customize their GCP to focus on areas of interest to them.

Requirements for admission: To be admitted to the MSE Graduate Certificate Program, a student must have a BS degree in the sciences or engineering from a regionally accredited four-year college or university, and have an overall (or major) GPA of at least 3.0 on a 4-point scale.

All new students must complete the NCSU Graduate School <u>application</u> for admission to the MSE GCP. The GRE exam is NOT required for admission to the GCP. Application deadlines are March 1 for summer and fall admission, and October 1 for spring admission. Students can begin study in the fall, spring or summer semester immediately following their acceptance into the program. Registration procedures, registration dates and course availability for each semester can be found on the NCSU Registration and Records webpage (http://www.ncsu.edu/registrar/). Information regarding Engineering Online can be found on the EOL webpage (engineeringonline.ncsu.edu).

Academic success in the MSE GCP might have a strong bearing on admission to a graduate degree program. However, completion of a graduate certificate program IN NO WAY guarantees entry into a graduate degree program, which must be done through a separate application process.

Academic Performance Requirements

- To receive a MSE Graduate Certificate, a student must maintain a minimum 3.00 grade point average (GPA) on all coursework taken at NCSU. All grades on courses taken towards the GCP in courses at the 500-level and above are included in the GPA. Any courses taken at the 400 level and below are not eligible for certificate credit and subsequently do not affect the graduate GPA.
- All courses taken for certificate credit must be completed with a grade of "B" or better.
- All courses taken for certificate credit must be letter-graded. Credit-only courses cannot be used for certificate credit.
- Transfer credit from other institutions is not allowed for the GCP. All coursework must be registered through NC State University.
- Up to six (6) hours of post-baccalaureate, graduate-level coursework taken at NC State, if not already used in another graduate program, may be transferred into the GCP. All transfer credit must carry a grade of B or better.
- All GCP requirements must be completed within four (4) calendar years, beginning with the date the student commences courses applicable to the GCP.

Program Administration: The MSE GCP is administered by the Distance Education Coordinator in the Department of Materials Science and Engineering, in cooperation with the NCSU Engineering Online program for distance-education students. Questions regarding the MSE GCP should be directed to:

Dr. C. Maurice Balik Professor and Distance Education Coordinator Department of Materials Science and Engineering Campus Box 7907 North Carolina State University Raleigh, NC 27695 Phone: 919-515-2126 Email: balik@ncsu.edu The Graduate Certificate in Mathematics is a one-year program that focuses on two groups of students. It is designed for students who have some mathematical training but do not have a full bachelor's degree in mathematics. It also targets students who have a bachelor's degree in mathematics but do not feel they are ready for graduate school.

The goal of the certificate is to prepare and motive students through courses and careful mentoring. The program will deepen and broaden students' understanding of mathematics, the mathematics profession, and the mathematical community. Students will learn how the mathematics discipline can solve significant problems for government, industry, other scientists, and ultimately, society at large.

Admissions: Application to the program requires an online application form, three (3) letters of recommendation (two need to be academic), transcripts of all academic work after high school, and a written statement. GREs are highly desirable but not required for admission. Admission will be on a competitive basis.

Requirements: Students take a combination of graduate and undergraduate mathematics courses that are tailored to the individual student. The certificate requires 12 hours of mathematics courses, taken for a grade, and to be taken at NC State. There is no specific list of courses for the certificate.

Of the 12 hours, three (3) hours may be at the 400 level with prior approval of the Director of Graduate Programs. The other nine (9) hours will be at the 500 level or above. Students must take at least two (2) courses per semester to remain in good standing. A grade of C- is required for a course to count toward the certificate. A 3.00 GPA is required to earn the certificate.

The Graduate Certificate in Mathematics Teaching and Learning is an online program that focuses on developing knowledge and instructional approaches in teaching mathematics. The program will primarily serve practicing teachers in middle school through college settings, or those preparing for careers in such settings, who want to expand their expertise related to teaching and learning mathematics. Students will learn how to apply research-based understandings of students' thinking, pedagogical approaches, and broader educational issues (e.g., discourse and equity) to inform practices of teaching content such as geometry, algebra, and statistics.

The Graduate Certificate in Medical Devices is a joint program that links NC State's College of Engineering with the University of North Carolina School of Medicine. The program prepares graduates to conceive and design prototypes for new medical devices as well as training in market assessment, financing options, etc.

Admissions: Enrolled NCSU and UNC graduate students, doctoral candidates and post-docs, as well as part-time and full-time faculty and staff, may apply online at the Certificate's website. Professionals from the local MedTech sector may also apply online through the NCSU Graduate School. A bachelor's degree is required. Preference is given to applicants with scientific and/or engineering backgrounds.

Requirements: The program requires a total of 12 credit hours from an approved course list, including two BME advanced medical devices courses, two related business courses, and participation in ten clinical seminars.

For more information, see the <u>Certificate's website</u> or contact the Director.

Training in molecular biotechnology is essential for a wide range of disciplines from microbiology, plant and animal sciences to chemical engineering. The Graduate Certificate Program in Molecular Biotechnology offers an opportunity for individuals educated in the life sciences and related disciplines to gain laboratory-based, hands-on molecular biology training. NC State graduate students with career interests that involve molecular biotechnology, but are not eligible for the minor, are eligible to apply for the certificate.

The Graduate Certificate Program in Molecular Biotechnology will require a minimum of 12 hours of required and elective courses as listed below:

REQUIRED (5 credits)

BIT 510 and BIT 510L Core Technologies in Molecular and Cellular Biotechnology (4 credits)

BIT 501 Ethical Issues in Biotechnology (1 credit) or an approved research ethics or bioethics course

BIT Capstone Cloning Project (due two weeks after completing BIT510)

BIOTECHNOLOGY LABORATORY ELECTIVES (4 credits)

For the most up to date list of courses please visit the BIT website: http://biotech.ncsu.edu/courses
Two of the following courses and their laboratories (2 credits each):

Any BIT 595 laboratory course (2 credits)

BIT 562 Microarrays

BIT 564 Protein Purification

BIT 565 Real-time PCR Techniques

BIT 566 Animal Cell Culture

BIT 567 PCR and DNA Fingerprinting

BIT 568 Genome Mapping

BIT 571 RNA Interference and Model Organisms

BIT 572 Proteomics

BIT 573 Protein-Protein Interactions

BIT 574 Plant Genetic Engineering

BIT 576 Computation Analysis of Biomolecular Sequences

BIT 577 Metagenomics

BIT 578 Mapping the Brain

OTHER ELECTIVES -- CHOOSE ONE (3 credits)

GN 513 Advanced Genetics

MB 714 Microbial Metabolic Regulation

MB(GN) 758 Prokaryotic Molecular Genetics

BO 780 Plant Molecular Biology

BCH 553 Biochemistry of Gene Expression

FS(MB) 725 Fermentation Microbiology

ST(GN) 721 Genetic Data Analysis

GN 701 Molecular Genetics

GN 735 Functional Genomics

CHE 551 Biochemical Engineering

Other courses (400-level or higher) may be considered by special request.

A Graduate Certificate in Nonprofit Management is available to students, including NC State degree students, who have a Bachelor's degree from an accredited university. The Certificate requires 15 credit hours of course work and substantive nonprofit experience. The courses are designed to provide the basic management knowledge and skills needed in nonprofit organizations. For applications and a description of program requirements go to https://spia.ncsu.edu/graduate/nonprofit_cert.php.

The certificate program in Nonwovens Science and Technology provides NC State graduate students the opportunity to develop recognized academic credentials in Nonwovens Science and Technology in addition to their major area of graduate study. Provide non-degree graduate level students the opportunity to develop recognized advanced expertise in Nonwovens Science and Technology.

Required Coursework: The Graduate Certificate Program in Nonwovens Science and Technology requires a minimum of 15 hours and includes the following courses:

Core Courses (6 hours):

TT(NW) 503 Materials, Polymers and Fibers Used in Nonwovens (3 hours) *OR*TMS 762 Physical Properties of Fiber Forming Polymers, Fibers and Fibrous Structures (3 hours)
TT(NW) 504 Introduction to Nonwovens Products and Processes (3 hours)

Advanced Courses (minimum 9 hours)*:

TT(NW) 505 Advanced Nonwovens Processing (3 hours)

TT(NW) 506 Bonding Principles in Nonwovens (3 hours)

TT(NW) 507 Nonwoven Characterization Methods (3 hours)

TT(NW) 508 Nonwoven Product Development (3 hours)

^{*}One NC State course (400-level or higher) may be substituted for one of the advanced courses into the program upon agreement between the Certificate Coordinator and the student. The Certificate Coordinator will maintain a list of graduate-level courses appropriate to use as substitutions.

The objective of the program is to educate students about nuclear nonproliferation, safeguards, and security from both the global and the technical perspectives. Students will be exposed to state-of-the-art techniques and will develop an understanding of the technical and policy challenges to maintain and support a robust nuclear nonproliferation regime. This process will be supported by assignments designed to reinforce understanding of the individual subject areas covered, class projects which cover key areas such as proliferation case studies and physical security simulations, as well as interactions with subject matter experts in nuclear nonproliferation technology and policy.

The Graduate Certificate in Supply Chain Management is a one to two year program working professionals in the Raleigh and Research Triangle community. They will obtain advanced skills in strategies. processes, planning and control, quality, scheduling, work design, and advanced operations techniques using a variety of managerial and quantitative models.

Admission requirements: For admission requirements, please visit the admissions website.

This online certificate program is designed to provide graduate students and professionals with a common platform of courses that will enhance their communication skills and professional development. In particular, professional science master's program students in the program will gain the management and communication training that will allow them to transfer success in the laboratory to success in the marketplace.

Admission Requirements: Students not attending NC State must apply through the regular application process (see http://www.ncsu.edu/grad/applygrad.htm). Proof of completion of a bachelor's degree is necessary. A minimum undergraduate GPA of 3.0 is required for admission to the certificate program. However, GRE scores are not required.

Students currently in a degree program at NC State may add the certificate program to their degree program by completing the application for currently enrolled graduate students. For applications and description of program requirements, see the program web site at https://communication.chass.ncsu.edu/academics/pcms/.

Student Financial Support: See NC State's Office of Scholarships and Financial Aid at https://studentservices.ncsu.edu/your-money/financial-aid/

Other Relevant Information: The interdisciplinary certificate requires a total of 12 credit hours, with 6 hours taken in the Poole College of Management and 6 hours taken in the College of Humanities and Social Sciences. Two required classes are BUS 590 (Management Foundations) and BUS 554 (Strategic Project Management). Two of the three following classes should also be taken: COM 521 (Communication and Globalization), COM 527 (Seminar in Organizational Conflict Management), or COM 530 (Interpersonal Communication in Science/Technology Organizations). To earn the certificate students must achieve a minimum 3.0 GPA in the program.

The Program Development in Family Life Education certificate is closed to new student enrollment. Please visit the Department of Youth, Family, and Community Sciences website for information on our current certificate offerings.

The Department of Youth, Family, and Community Sciences (YFCS) at North Carolina State University is proud to offer graduate distance education programs designed to prepare and strengthen current and future professionals. The Youth, Family, and Community Sciences online programs create and advance the careers of those who work with youth and/or families in community-based settings.

Admissions: Students apply online at http://www.ncsu.edu/grad/applygrad.htm

Requirements: A Graduate Certificate in Program Development in Family Life Education requires a total of 12 credit hours. Nine (9) credit hours are required courses, with the remaining 3 credit hours of electives. All courses are offered online only.

Required Courses (9 credit hours)

FYD 543 Applied Concepts in Parenting and Family Life Education

FYD 552 Program Development and Evaluation in Family and Youth Settings

FYD 556 Organizational Systems in Youth and Family Settings

Electives (3 credit hours)

Approved course in Family Life and Youth Development (FYD)

The Graduate Certificate in Renewable Electric Energy Systems provides graduate students with the opportunity to develop expertise in renewable electric energy systems and advanced electric power grid technology in addition to their major area of graduate study.

Admissions: Applicants with appropriate background must meet one of the three following requirements:

- be a graduate of an accredited four-year college or university, and have a GPA of at least 3.0 on a 4-point scale in their last 60 credit hours of undergraduate study;
- be a degree student in good standing in an NC State University graduate program; or
- have a Master's degree in a related field of study.

A student may obtain more than one graduate certificate in a different field. Each certificate must have at least nine (9) credit hours that are unique to it.

Requirements: The Graduate Certificate in Renewable Electric Energy Systems requires a minimum of 12 hours, including one 3-hour core course and 9 credit hours of electives to be selected from a list that contains relevant courses for the certificate. Students must maintain a minimum overall GPA of B (3.0).

For course and enrollment information please visit the <u>Department of Electrical and Computer Engineering website</u>.

The intent of the Special Education: Multi-Tiered Systems of Support (MTSS) program is to provide post-baccalaureate students with knowledge related to 21st century special education service delivery in the schools. The certificate program courses include foci on the contemporary, evidenced based intervention concepts of Multi-Tiered Systems of Support (MTSS), as well as Positive Behavior Intervention and Support (PSIS) and, to a lesser degree, Response to Intervention (Rtl).

The GCSE:MTSS program is a portal through which participants may ultimately pursue a Master of Education (M.Ed.) or Master of Arts in Teaching (MAT), and/or licensure in special education.

The four online courses in the GCSE:MTSS represent 12 credit hours of graduate-level coursework. No transfer credits from other institutions are allowed to substitute for any of the four courses in this program. All courses must be completed at NC State.

For more please see https://ced.ncsu.edu/programs/special-education-mtss/

Admission Requirements: GCSE:MTSS program application requires:

- a resume that identifies educational preparation and professional employment and experiences
- a statement of professional goals indicating how the GCSE:MTSS will enhance job performance or career development
- a projected semester timeline for completing Certificate requirements
- an official academic transcript from each undergraduate institution that is listed on the application. The official transcript from an institution where an undergraduate degree was earned must include the name of the degree, the area of study, and the year of award. International transcripts must meet the requirements of the Graduate School for translation equivalency.

Faculty have the option to request interviews with applicants (conducted in person, via telephone conferencing, online via teleconferencing, etc.) prior to making an admission decision.

Whether you are interested in managing stadiums, amphitheaters, performing arts centers or sport arenas, this immersive facilities management program is right for you.

This one-year online graduate certificate program was designed in collaboration with industry experts to either advance your career or facilitate entry into this exciting field.

The 12-credit-hour graduate certificate program can be completed entirely online. Students are admitted as a cohort and complete all required courses as a group. Using an 8-week accelerated course format, students take one course at a time and finish the program in two semesters.

In the Graduate Certificate in Statistics Education, students will learn statistical concepts, methods, and pedagogical techniques for teaching these statistical topics at the college (or high school) level. The emphasis of the program is on the effective use of modern technology for teaching statistics. The courses required for this graduate certificate are listed below.

- Statistical Methods I: ST511 (or ST513)
- Statistical Methods II: ST512 (or ST514)
- Teaching and Learning of Statistical Thinking: ST519
- Teaching Statistics with Technology: ST557

Admissions: The application process is very simple, there are no official prerequisites except for an undergraduate degree. Applicants should demonstrate an appropriate level of mathematical maturity to allow them to succeed in the certificate program. Examples of this would include successful completion of undergraduate coursework or professional work in a quantitative field. Note that the GRE is not required to apply and we only accept students living in North America.

Requirements: The certificate will be earned by successful completion of four courses listed above with an average GPA of at least 3.0.

The Graduate Certificate in Tax Analytics and Technology is currently a two to three year online program that targets for enrollment MAC and MBA graduate students at NC State, graduate students at other universities and working professionals in the Research Triangle, national and global community. They will learn knowledge and skills to extract, manipulate, analyze, and summarize tax data to solve tax problems, identify opportunities for tax savings, and to effectively communicate actionable tax and business strategies to organizations.

Admissions Requirements: Graduate students at NC State must be in good standing. Students not enrolled at NC State must have completed a baccalaureate degree and have either taken some introductory/intermediate accounting and tax courses or have work experience in these areas. All students must submit an application to the certificate program which will be reviewed and evaluated by the coordinator. A minimum GPA of 3.0 (in undergraduate and/or prior graduate work) is required for admission to the program.

Program Requirements: The certificate program requires students to complete twelve (12) one-credit hour online courses with an overall 3.0 GPA in all courses. No transfer credits will be accepted in the program and it must be completed within four years.

Delivered 100% online, the Certificate consists of five 3-credit courses focused on teaching, training, and the use of technology in a variety of educational environments. Students can tailor the program to meet their needs and gain the knowledge and skills necessary to design and deliver course-related content through face-to-face, technology-enhanced, and e-learning environments. The program is designed for mid-career individuals who may be without academic preparation for their current positions, or for those choosing to increase their knowledge and skills in the field for future job opportunities.

Students may choose one of the following specialty areas: Training and Development, Instructional Design, E-Learning, Community College Teaching, and Community College Leadership.

In order to be awarded the Certificate, all required courses must be taken and one elective is allowed. Transfer credit from other institutions is not allowed.

Please see the department website for the specific required and elective courses for each specialization. For course descriptions, please refer to the NC State <u>listing of courses</u>. For further information, see the Certificate in Teaching, Training and Educational Technology (https://ced.ncsu.edu/programs/teaching-training-educational-technology-certificate/) website.

The Graduate Certificate in Technology Entrepreneurship and Commercialization (TEC) is a one to two year program designed for working professionals in the Raleigh and Research Triangle community. The TEC certificate is a hands-on, project-based practicum in creating and growing technology-intensive businesses. Students develop knowledge, skills and tools useful for engaging in technology entrepreneurship. We focus on capabilities that are equally relevant to the creation and growth of new ventures or to the creation of innovation within established firms. Students learn and apply a proven structured process (developed at NC State but adopted by many universities and taught on four continents) to evaluate technologies, create and develop product ideas, and construct business proposals to bring technology-based products to market. Students with primarily technical backgrounds and those with primarily business backgrounds gain essential skills in working together productively.

Admissions Requirements: For admission requirements, please visit the <u>admissions website</u>.

Program Requirements: The certificate program requires students to complete twelve (12) credit hours with an overall 3.0 GPA in all certificate courses. Credit toward the certificate in a particular course will be given only if a grade of B-or better is earned in that course. All courses in the program must be taken for a letter grade. No transfer credits will be accepted in the program and it must be completed within three years.

The Graduate Certificate Program in Textile Brand Management and Marketing provides graduate students with the opportunity to develop academic credentials in branding fundamentals and theories for a globalized industry and market research while complementing this knowledge with topics of strategic management, product development, supply chain management and technology management. The program also provides non-degree graduate-level students with the opportunity to develop recognized advanced expertise in Textile Brand Management and Marketing.

Admission: Applications must meet one of the following three requirements:

- Be a graduate of an accredited four-year college or university and have a grade point average of at least 3.0 on a 4-point scale in their last 60 credit hours of undergraduate study;
- Be a degree student in good standing in an NC State University graduate program; or
- Have a Master's degree.

Applicants who do not meet the GPA requirements may be admitted professionally based on past work experience as a professional in textiles or a textile related field. Supporting documentation of professional experience in textile should be submitted for provisional admission. Students who are admitted provisionally must earn at least a "B" average in the first three courses of the certificate program in order to obtain full admission into the certificate program.

Requirements: A minimum of 15 credit hours is required to complete the certificate program and student must have a minimum 3.0 grade point average on all certificate course work. Transfer credit from other universities is not allowed. All work must be completed in four (4) calendar years, beginning from the time the student begins course work for the Certificate.

For more information, please visit the <u>Textile Technology and Management</u> website.

The Graduate Certificate Program in Textile Supply Chain Management provides NC State graduate students the opportunity to develop recognized academic credentials in this concentration in addition to their major area of graduate study. The Certificate also provides non-degree graduate-level students the opportunity to develop recognized advanced expertise in Textile Supply Chain Management.

Admission: Applicants must meet one of the 3 following requirements:

- Be a graduate of an accredited four-year college or university, and have a GPA of at least 3.0 on a 4-point scale in their last 60 credit hours of undergraduate study;
- Be a degree student in good standing in a NC State University graduate program; and
- Have a Master's degree.

Provisional Admission: Applicants who do not meet the GPA requirements may be admitted provisionally based on past work experiences as a professional in textiles or a textile related field. Supporting documentation of professional experience in textiles should be submitted for provisional admission. Students who are admitted provisionally must earn at least a "B" average in the first three courses of the certificate program in order obtain full admission into the certificate program.

Program Requirements: The Graduate Certificate in Textile Supply Chain Management requires a minimum of 15 hours, and includes the following courses:

Core Courses (9 credit hours)

TTM 501 Textile Enterprise Integration (3)

TTM 761 Supply Chain Management and Information Technology (3)

TE 533 Lean Six Sigma (3) OR

TE 540 Computer Information Systems

Advanced Courses (6 credit hours)

TTM 530 Textile Quality and Process Control (3)

TTM 531 Total Quality Management (3)

TTM 583 Strategic Planning for Textile Firms (3)

TTM 588A Global Perspectives in Textile Supply Chain Management: USA (3)

TE 533 Lean Six Sigma (3) OR

TE 540 Computer Information Systems

One NC State course (400 level or higher) may be substituted for one of the advanced courses into the program upon agreement between the Certificate Coordinator and the student. The Certificate Coordinator maintains a list of appropriate graduate level courses.

Academic Performance:

- Award of a Graduate Certificate in Textile Supply Chain Management (GCTSCM) requires a minimum overall GPA of 3.0.
- None of the required 15 hours may be taken for S/U or "credit only".
- No transfer credits from other institutions are allowed for the certificate.
- All students must be registered through NC State University.
- All GCTSCM requirements must be completed within the first four (4) calendar years beginning with the date the students begins the course work for the certificate.
- All Certificate students are expected to maintain continuous enrollment every semester (excluding summer sessions) until all course work is completed. Under unusual circumstances, a one-semester leave of absence will be granted if the student is unable to enroll in a course. Written approval from the certificate coordinator must be obtained before the beginning of the semester.

Graduate students and working professionals can now earn a new credential to kick-start or advance their career in the biopharmaceutical industry. Applications are currently being accepted for two new BTEC graduate certificate programs. The Upstream Biomanufacturing graduate certificate offers NC State graduate students and working professionals the opportunity for hands-on learning in BTEC's industry-scale simulated cGMP facilities.

Each certificate requires 12 hours of graduate coursework, which can be transferred to the Master of Biomanufacturing program. The majority of BTEC's graduate courses are offered in the evening or online to better accommodate working professionals.

Admission Requirements: Applicants must apply to the Graduate School http://www.ncsu.edu/grad/applygrad.htm. Those applicants who are currently enrolled in an NC State graduate program need only provide the Graduate Student Certificate Plan Data Entry forms, http://ncsu.edu/grad/faculty-and-staff/docs/grad-cert-plan-data-entry.pdf. An application for acceptance into a certificate programs is required for all new applicants once the student has:

- 1. either have graduated with a baccalaureate degree in a science or engineering discipline with a minimum GPA of 3.0 or
- 2. have complete one or more 500+ level BEC courses which satisfy the certificate requirement with a grade of B- or better on the first enrollment in every course completed.

Certificate Degree Requirements: To earn the Graduate Certificate in Upstream Biomanufacturing, students must complete the following list of unique core courses and complete one or more elective course for a minimum total of 12 credit hours. The grade in each course for the Certificate must either be B- or higher and the over-all GPA for the Certificate courses must be 3.00 minimum. Graduate certificates are limited to 1 400 level course.

Transfer credit from other institutions will not be allowed for the Certificate. All course work must be registered through NC State University.

Required Unique Courses (9 credits total)

CHE 563 Fermentation of recombinant microorganisms (2 credits)

BBS 526 Upstream biomanufacturing laboratory (2 credits)

BEC 580 cGMP Fermentation operations (2 credits)

BEC 577 Advanced Biomanufacturing and Biocatalysis (3 credits)

Additional Courses (Minimum of 3 credits total)

BEC 575 Global regulatory affairs (3 credits)

MBA 554 Project Management (3 credits) or ISE 589 Project Management for Engineers (3 credits)

BIT 566 Animal Cell Culture Techniques (2 credits)

BEC 488 Cell Culture Engineering (2 credits)

BEC 440 Expression Systems in Biomanufacturing (3 credits) or BIT 510 Core Technologies in Molecular and Cellular Biology (4 credits)

The certificate in Upstream Biomanufacturing requirements must be completed within four (4) calendar years, beginning with the date the student commences courses applicable to the Certificate. Students who complete the certificate in Upstream Biomanufacturing may obtain more than one certificate. However, each certificate must have at least nine (9) hours of BEC course work which are unique to it.

Other Relevant Information: A unique, cross-disciplinary instructional center, the Golden LEAF Biomanufacturing Training and Education Center (BTEC) provides educational and training opportunities to develop skilled professionals for the biomanufacturing industry and create the best-trained, most industry-focused workforce possible.

The Youth, Family, and Community Sciences (YFCS) academic program at North Carolina State University offers three graduate distance education programs designed to prepare and strengthen the careers of those who work with youth and/or families in community-based settings.

The Youth, Family, and Community Sciences Online Graduate Certificate in *Youth Development and Leadership* specifically prepares students to work as leaders in youth-serving organizations. Students will gain a more comprehensive understanding of youth development, as well as an applied understanding of strengths-based leadership skills, designed to provide oversight, preventative education, enrichment opportunities, and/or resources intended to strengthen, improve, or enhance youth development and organizational administration.

Admissions: Students apply online at https://grad.ncsu.edu/apply/

Requirements: A Graduate Certificate in Youth Development Leadership requires a total of 12 credit hours. Six (6) credit hours are required courses, with the remaining six (6) credit hours of electives. All courses are offered online only.

Required Courses (6 credit hours)

YFCS 550 Youth and Family Professionals as Leaders YFCS 553 Applied Concepts in Child and Youth Development

Electives (6 credit hours)

Approved YFCS course related to organizational administration Approved YFCS course related to youth or family development

Biological Sciences

There is no separate graduate major in the biological sciences, but both M.S. and Ph.D. degrees are offered in several life science departments and programs of the College of Agriculture and Life Sciences. Interdisciplinary courses applicable to several graduate programs are offered by the <u>Department of Biology</u>.

Education [General Courses]

GRADUATE COURSES

	ED((AEE)	501	Founda	tions	of A	Agricu	ltural	and	Extension	Educa	tior
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ED(AEE) 530 Priority Management in Agricultural and Extension Education

ED(AEE) 641 Practicum in Agricultural and Extension Education

ED(AEE) 735 Effective Teaching in Agriculture and Life Sciences

ED(AEE) 841 Practicum in Agricultural and Extension Education

Multidisciplinary Studies

GRADUATE COURSES

MDS 515 Peruvian Amazon Ecology and Ethnology MDS 595 Special Topics in Multidisciplinary Studies MDS 610 Special Topics MDS 685 Master's Supervised Teaching

Philosophy and Religious Studies

Dr. Michael Pendlebury Professor and Department Head

NC State Box 8103 Phone: 919.515.6103 Fax: 919.513.4351

Email: mjpendle@ncsu.edu

Website: http://www.ncsu.edu/chass/philo/

There are no graduate degrees in Philosophy or Religious Studies, but the Department offers a variety of graduate courses in Logic, Philosophy, and Religious Studies. One or more of these courses can be used to enhance many graduate degree programs.

The Department also administers the **Graduate Minor in Cognitive Science**.

GRADUATE COURSES

LOGIC

LOG 535 Advanced Logic and Metamathematics LOG 537 Model Theoretic Semantics

PHILOSOPHY

PHI 501 Kant's Critique of Pure Reason

PHI 520 Global Justice

PHI(PSY) 525 Introduction to Cognitive Science

PHI 540 The Scientific Method

PHI 547 Philosophy, Evolution and Human Nature

PHI 575 Ethical Theory

PHI 598 Special Topics in Philosophy

PHI 798 Advanced Topics in Philosophy

PHI 816 Introduction to Research Ethics

RELIGIOUS STUDIES

REL 571 Darwinism and Christianity

REL 573 Religion, Gender, and Reproductive Technologies

REL 582 Religion and Conflict

Name	Academic Rank Descr	Work Location	GFAC Status	Tenure Home
Abolhasani, Milad	Asst Professor	Chemical & Biomolecular Engr	Grad Faculty	Chemical & Biomolecular Engr.
Abrams Jr, Charlie F.	Emeritus Professor	Biological And Agricultural En	Grad Faculty	Biomedical Program-Engineering
Abrams,Robin Fran	Professor	Architecture	Grad Faculty	Architecture
Abt,Karen L	Adjunct Professor	For & Envir Res Acad Research	Affiliate Grad Faculty	For & Envir Res Acad Research
Abt,Robert Carroll	Named Professor	For & Envir Res Acad Research	Grad Faculty	For & Envir Res Acad Research
Acosta, Juan Jose	Research Asst Professor	CAMCORE-Cooperative	Grad Faculty	For & Envir Res Acad Research
Adams Warren, Carrol Lynn	Teaching Asst Professor	ELPHD	Grad Faculty	ELPHD
Adams, Jacob James	Asst Professor	Electrical & Computer Engr.	Grad Faculty	Electrical & Computer Engr.
Aday, David Derek	Professor	Applied Ecology	Grad Faculty	Applied Ecology
Addor,Mary Lou	Adjunct Asst Professor	Forestry Extension	Affiliate Grad Faculty	ELPHD
Ade,Harald	Professor	Physics	Grad Faculty	Physics
Adin,Christopher Andrew	Adjunct Assoc Professor	Dept of Clinical Sciences	Grad Faculty	Dept of Clinical Sciences
Adin, Darcy Brittain	Clinical Asst Professor	Dept of Clinical Sciences	Affiliate Grad Faculty	Dept of Clinical Sciences
Adler,Kenneth B.	Professor	Dept Molecular Biomedical Scie	Grad Faculty	Dept Molecular Biomedical Sci
Adler, William	Distinguished University Prof	Philosophy & Religious Studies	Grad Faculty	Philosophy & Religious Studies
Ahiska King,Semra Sebnem	Adjunct Asst Professor	Fitts Dept Indust & Syst Engr	Affiliate Grad Faculty	Fitts Dept Indust & Syst Engr
Aiyyer,Anantha	Assoc Professor	Marine, Earth And Atmospheric	Grad Faculty	Marine Earth & Atmospheric Sci
Akpa PhD,Belinda Sena	Asst Professor	Dept Molecular Biomedical Scie	Grad Faculty	Dept Molecular Biomedical Sci
Akroyd,Duane	Professor	ELPHD	Grad Faculty	ELPHD
Alapaty,Kirankumar V	110103501	Marine, Earth And Atmospheric	Affiliate Grad Faculty	LETTIO
Albert,Alex	Asst Professor	Civil Const & Environ Engineer	Grad Faculty	Civil, Const & Env Engineering
•	Emeritus Associate Professor	Foreign Languages And Literatu	·	
Alder, Ruth A.		0 0 0	Grad Faculty	Foreign Languages and Lit
Aldige,Virginia M	Emeritus Named Professor	Sociology & Anthropology	Grad Faculty	Sociology & Anthropology
Alexander PhD,Winser E.	Emeritus Professor	Electrical & Computer Engr.	Grad Faculty	Electrical & Computer Engr.
Alexander,Samuel T.	Assoc Professor	Electrical & Computer Engr.	Grad Faculty	Electrical & Computer Engr.
Alexanderian, Alen	Asst Professor	Mathematics	Grad Faculty	Mathematics
Allaire, Jason Christopher	Assoc Professor	Psychology	Grad Faculty	Psychology
Allbritton,Nancy Lynn	Professor	Biomedical Program - ENG	Grad Faculty	Biomedical Program-Engineering
Allen Jr,Howard Lee	Emeritus Professor	The Forest Nutrition Cooperati	Grad Faculty	For & Envir Res Acad Research
Allen,George C	Emeritus Research Assoc Prof	Horticultural Science	Grad Faculty	Horticultural Science
Allen, Jonathan C.	Professor	Food, Bioprocess & Nutrition Sc	Grad Faculty	Food, Bioprocess & Nutrition Sc
Allen,Kimberly I.	Assoc Professor	Agricultural & Human Sciences	Grad Faculty	4-H Youth Dev & Fam & Cons Sci
Allen,Nina S	Emeritus Professor	Plant and Microbial Biology	Grad Faculty	Plant and Microbial Biology
Allen,Steven G.	Professor	MBA Program-Poole COM	Grad Faculty	Business Management-Poole COM
Allen,Tania Leigh	Assoc Professor	Art and Design	Grad Faculty	Art and Design
Alley,Mark L	Adjunct Assoc Professor	Dept-Population, Health, Pathobi	Affiliate Grad Faculty	Population Health&Pathobiology
Almond,Glen William	Professor	Dept-Population, Health, Pathobi	Grad Faculty	Population Health&Pathobiology
Alonso, Jose Miguel	Named Professor	Plant and Microbial Biology	Grad Faculty	Plant and Microbial Biology
Alonso,Silvia T.	Emeritus Associate Professor	Foreign Languages And Literatu	Grad Faculty	Foreign Languages and Lit
Alston-Mills,Brenda P	Emeritus Professor	Animal Science	Grad Faculty	Animal Science
Alvarez Munoz, Jose Santos	Adjunct Asst Professor	For & Envir Res Acad Research	Affiliate Grad Faculty	For & Envir Res Acad Research
Amassian,Aram	Assoc Professor	Materials Science & Engineering	Grad Faculty	Materials Science & Engineering
Amatya, Devendra M	Adjunct Assoc Professor	Biological And Agricultural En	Affiliate Grad Faculty	Biological And Agri Engr
Ambaras, David R	Professor	History	Grad Faculty	History
Amein,Michael	Emeritus Professor	Civil Const & Environ Engineer	Grad Faculty	Civil, Const & Env Engineering
Amerson,Henry Van	Emeritus Associate Professor	Forest Biotech Program	Grad Faculty	For & Envir Res Acad Research
Ames,Natalie R.	Assoc Professor	Social Work	Grad Faculty	Social Work
Amezquita, Alejandro	Adjunct Asst Professor	Food, Bioprocess & Nutrition Sc	Affiliate Grad Faculty	Food, Bioprocess & Nutrition Sc
Amoozegar,Aziz	Professor	Crop & Soil Sciences	Grad Faculty	Soil Science
Anantharamaiah, Nagendra	Research Asst Professor	Textile Engineering, Chemistry	Affiliate Grad Faculty	Textile Engr Chemistry & Sci
Anderson,Kenneth E	Professor	Prestage Poultry Science	Grad Faculty	Prestage Poultry Science
Anderson, Kevin L.	Professor	Dept-Population,Health,Pathobi	Grad Faculty Grad Faculty	Population Health&Pathobiology
•			•	Sci, Tech, Engr & Math (STEM)
Anderson, Norman Dean	Emeritus Professor	Sci, Tech, Engr & Math (STEM)	Grad Faculty	· · · · ·
Andrady, Anthony L	Adjunct Professor	Chemical & Biomolecular Engr	Affiliate Grad Faculty	Chemical & Biomolecular Engr.
Andrews, Janice M	Adjunct Assoc Professor	Dept-Population,Health,Pathobi	Affiliate Grad Faculty	Population Health&Pathobiology
Aneja, Viney Pal	Professor	Marine, Earth And Atmospheric	Grad Faculty	Marine Earth & Atmospheric Sci
Ange-Van Heugten, Kimberly Dawn	Teaching Asst Professor	Animal Science	Grad Faculty	Animal Science
Anholt,Robert R	Adjunct Professor	Biological Sciences	Grad Faculty	Biological Sciences
Anistratov,Dmitriy Y	Assoc Professor	Nuclear Engineering	Grad Faculty	Nuclear Engr
Annett-Hitchcock,Katherine Emma	Assoc Professor	Textile & Apparel, Technology	Grad Faculty	Textile & Apparel Tech & Mgmt
Anson,Christopher M	Distinguished University Prof	English	Grad Faculty	English
Anton,Ana I	Adjunct Professor	Computer Science-engr	Affiliate Grad Faculty	Computer Science-Engr
Apperson, Charles Smith	Emeritus Named Professor	Entomology & Plant Pathology	Grad Faculty	Entomology
Appling,Tracy Ann	Teaching Asst Professor	Public & International Affairs	Grad Faculty	Public & International Affairs
Arasu,Prema	Professor	Dept Molecular Biomedical Scie	Grad Faculty	Dept Molecular Biomedical Sci
Archer, Daniel	Adjunct Assoc Professor	Nuclear Engineering	Affiliate Grad Faculty	Nuclear Engr
Archer,Trevor Keith	Adjunct Professor	Dept-Population,Health,Pathobi	Affiliate Grad Faculty	Population Health&Pathobiology
Ardon Sayao, Marcelo Luise	Assoc Professor	For & Envir Res Acad Research	Grad Faculty	For & Envir Res Acad Research
Arends, James J.	Adjunct Professor	Entomology & Plant Pathology	Affiliate Grad Faculty	Entomology
Arendt,Carli Anne	Asst Professor	Marine, Earth And Atmospheric	Grad Faculty	Marine Earth & Atmospheric Sci
Argyropoulos, Dimitris S	Professor	Forest Biomaterials	Grad Faculty	Forest Biomaterials
Armstrong, Helen Saunders	Assoc Professor	Graphic & Industrial Design	Grad Faculty	Graphic & Industrial Design
Arnold,Alison E.	Lecturer	Music	Affiliate Grad Faculty	Music
Arnold,Alison E.	Teaching Asst Professor	Interdisciplinary Studies	Affiliate Grad Faculty	Interdisciplinary Studies
Arnold,John F.	Emeritus Associate Professor	TELS	Grad Faculty	TELS
Arrington, Shirley Hart		ELPHD	Affiliate Grad Faculty	
Arumugam,Sankarasubramanian	Professor	Civil Const & Environ Engineer	Grad Faculty	Civil, Const & Env Engineering
Arya,Satya Pal Singh	Emeritus Professor	Marine, Earth And Atmospheric	Grad Faculty	Marine Earth & Atmospheric Sci
Ascencio-Ibanez, Jose Trinidad	Teaching Assoc Professor	Biochemistry	Grad Faculty	Biochemistry
Ashley,Patricia Andrews		ELPHD	Affiliate Grad Faculty	
Ashrafi,Hamid	Asst Professor	Horticultural Science	Grad Faculty	Horticultural Science
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Ashwell Christonher M Professor Prestage Poultry Science Grad Faculty Prestage Poultry Science Distinguished University Prof Grad Faculty Aspnes, David E Physics Physics Grad Faculty Atchlev.William Reid Emeritus Named Distng'd Prof **Biological Sciences** Genetics Atkins, Clarke E. **Emeritus Distinguished Prof** Dept of Clinical Sciences **Grad Faculty** Dept of Clinical Sciences Atkinson, Maxine P. Professor Sociology & Anthropology **Grad Faculty** Sociology & Anthropology Attarian PhD.Aram Emeritus Associate Professor Parks, Recreation & Tourism Mg **Grad Faculty** Health and Exercise Studies Auerbach, David D. Emeritus Asst Professor Philosophy & Religious Studies **Grad Faculty** Philosophy & Religious Studies Affiliate Grad Faculty Augspurger.Thomas Paul Adjunct Assoc Professor **Biological Sciences Biological Sciences** Augustyn. Veronica Asst Professor Materials Science & Engineering **Grad Faculty** Materials Science & Engineering Aurand, Leonard W. Emeritus Professor Food, Bioprocess & Nutrition Sc Grad Faculty Food, Bioprocess & Nutrition Sc Austin David Franklin Assoc Professor Philosophy & Religious Studies Grad Faculty Philosophy & Religious Studies Adjunct Assoc Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Avery Jr, Gene Brooks Avery Matthew Rogers Statistics Affiliate Grad Faculty Statistics Avramova, Maria Nikolova Assoc Professor Nuclear Engineering **Grad Faculty** Nuclear Engr Aylor, David Lawrence Asst Professor Biological Sciences Grad Faculty **Biological Sciences** Avoub.Ali Adjunct Asst Professor Forest Biomaterials Affiliate Grad Faculty Forest Biomaterials Avoub, Mahmoud A. Emeritus Professor Fitts Dept Indust & Syst Engr Grad Faculty Fitts Dept Indust & Syst Engr Ayscue, Jennifer Baucom Asst Professor FIPHD Grad Faculty FIPHD Aysu, Aydin Asst Professor Electrical & Computer Engr. Affiliate Grad Faculty Electrical & Computer Engr. Aziz,Tarek Asst Professor Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Azmy, Yousry Y Distinguished Professor **Nuclear Engineering Grad Faculty** Nuclear Engr BERRIDGE, Brian R Dept-Population, Health, Pathobi Population Health&Pathobiology Adjunct Assoc Professor Affiliate Grad Faculty Baars.Oliver Asst Professor Entomology & Plant Pathology **Grad Faculty** Entomology & Plant Pathology Bacheler Jack S Emeritus Professor Entomology & Plant Pathology Grad Faculty Entomology Bachmann.Klaus J. **Emeritus Professor** Materials Science & Engineering **Grad Faculty** Materials Science & Engineering Grad Faculty Bahler, Dennis R Assoc Professor Computer Science-engr Computer Science-Engr Bailey, Christopher Scott Assoc Professor **Dept of Clinical Sciences Grad Faculty Dept of Clinical Sciences** Bailey, John A. Emeritus Professo Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Bailey, Kermit L Assoc Professo Graphic & Industrial Design **Grad Faculty** Graphic & Industrial Design Baines,Barbara Joan Emeritus Professor English Grad Faculty English Bakalov.Boiko Nentchev Mathematics Mathematics Assoc Professor **Grad Faculty** Emeritus Named Distng'd Prof FIPHD FIPHD Baker III.George A Grad Faculty Baker, Anne Assoc Professor English **Grad Faculty** English Baker,Erin Marie Assoc Professor Chemistry **Grad Faculty** Chemistry Entomology & Plant Pathology Baker, James R. **Grad Faculty** Baker, James R. Emeritus Professor Entomology & Plant Pathology **Grad Faculty** Entomology Affiliate Grad Faculty Baker, Justin Scott Adjunct Assoc Professor For & Envir Res Acad Research For & Envir Res Acad Research Baker, Marshall Alan Asst Professor Agricultural & Human Sciences Grad Faculty Agricultural & Human Sciences Baker, Meecee M. Adjunct Professor Affiliate Grad Faculty Agricultural & Extension Edu Agricultural & Human Sciences Baker, Rodney B Clinical Assoc Professor Dept-Population, Health, Pathobi Affiliate Grad Faculty Population Health&Pathobiology Baker, Stanley B Professor ELPHD **Grad Faculty** ELPHD Baker-Ward,Lynne Elizabeth Psychology **Grad Faculty** Psychology Professor Balaban, John **Emeritus Professor** English **Grad Faculty** English Balaban, Robert S Adjunct Professor Dept-Population, Health, Pathobi Affiliate Grad Faculty Population Health&Pathobiology Business Management-Poole COM Affiliate Grad Faculty Balan.Tonva E Teaching Asst Professor Baldwin Tameshia Ballard Engineering-Academic Affairs Affiliate Grad Faculty Sci. Tech. Engr & Math (STEM) Baliga, B. Jayant Distinguished University Prof Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr Balik.Charles M. Professor Materials Science & Engineering Grad Faculty Materials Science & Engineering Balik,Suzanne M Teaching Asst Professor Computer Science-engr Affiliate Grad Faculty Computer Science-Engr Balint-Kurti, Peter J. USDA Professo Entomology & Plant Pathology **Grad Faculty** Entomology & Plant Pathology Ball Jr, Hershell R. **Emeritus Professor** Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Emeritus Associate Professor Economics-Poole COM Grad Faculty Economics-Poole COM Ball.David S Ballinger.Walter Elmer Emeritus Professor Horticultural Science **Grad Faculty** Horticultural Science Horticultural Science Ballington Jr. James Ralph Grad Faculty Banker, James R. **Emeritus Professor** History **Grad Faculty** History Banks, Alton Joseph Chemistry Affiliate Grad Faculty Chemistry Lecture Banks, Alton Joseph **Emeritus Professor** Chemistry Affiliate Grad Faculty Physics Banks, Harvey Thomas Named Distinguished Univ Prof Mathematics **Grad Faculty** Mathematics Textile Engineering, Chemistry Textile Engr Chemistry & Sci Banks-Lee, Pamela Assoc Professor **Grad Faculty** Grad Faculty Baran, Mesut E Professor Electrical & Computer Engr. Electrical & Computer Engr. Teaching Assoc Professor Parks Recreation & Tourism Mg Baran, Perver Korca Ctr. for Geospatial Analytics Grad Faculty Barbeau, Phillip Spencer Adjunct Professor Physics Affiliate Grad Faculty Physics Barbieri,Carla E Assoc Professor Parks, Recreation & Tourism Mg **Grad Faculty** Parks Recreation & Tourism Mg Barcinas, Susan J Assoc Professor **Grad Faculty** ELPHD ELPHD Civil, Const & Env Engineering Bardaka,Eleni Asst Professor Civil Const & Environ Engineer **Grad Faculty** Grad Faculty For & Envir Res Acad Research Bardon.Robert E Forestry Extension Professor Barker, Roger L. Named Professor Textile Engineering, Chemistry **Grad Faculty** Textile Engr Chemistry & Sci Distinguished University Prof Barlaz Morton A Civil Const & Environ Engineer Grad Faculty Civil, Const & Env Engineering Barletta, Kristin Anne Assoc Professor Textile & Apparel, Technology **Grad Faculty** Textile & Apparel Tech & Mgmt Barletta, Philip Thomas Electrical & Computer Engr Affiliate Grad Faculty Barnes, Harold J. Emeritus Professor Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Barnes.Tiffany M Professo Computer Science-engr **Grad Faculty** Computer Science-Engl Barnhardt,Robert A Emeritus Professor Textile & Apparel, Technology **Grad Faculty** Textile & Apparel Tech & Mgmt Barnhardt, William Wilton Professor English **Grad Faculty** English Assoc Professor Electrical & Computer Engr. Electrical & Computer Engr. Baron, Dror Zeev **Grad Faculty** Mgmt, Innovation&Entrepreneur Barr Steve H Professor Grad Faculty Mgmt, Innovation & Entrepreneu Barrangou, Rodolphe Professor Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Barrax, Gerald W. Emeritus Professor English **Grad Faculty** English Architecture Architecture Barrie, Thomas M Professor **Grad Faculty** Bartlett II, James E Assoc Professor ELPHD **Grad Faculty** ELPHD Bartlett,Michelle E Teaching Asst Professor **Grad Faculty** ELPHD ELPHD Bartley, Jon W. Professor Accounting-Poole COM Grad Faculty Accounting-Poole COM

Barycki Joseph I Professor Biochemistry - METRIC Grad Faculty Riochemistry Assoc Professor FIPHD Grad Faculty FIPHD Bass Lisa R Grad Faculty Bassett Ross Knox Professor History History Bataller PhD.Alexander William Research Asst Professor Physics **Grad Faculty** Physics Batchelor.Peter **Emeritus Professor** Architecture **Grad Faculty** Architecture Entomology & Plant Pathology Bateman, Durward F. Emeritus Professor Dean's Office - CALS **Grad Faculty** Bates PhD, John Joseph Adjunct Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Batra, Subhash K. Emeritus Named Professor Textile & Apparel, Technology **Grad Faculty** Textile & Apparel Tech & Mgmt Batson.Scott Christopher Adjunct Asst Professor Mathematics Affiliate Grad Faculty Mathematics Teaching Assoc Professor Battestilli Tzvetelina Computer Science-engi Affiliate Grad Faculty Computer Science-Engr Baugh Jr. John W Professor Civil Const & Environ Engineer Grad Faculty Civil, Const & Env Engineering Baughman, Gerald R. **Emeritus Associate Professor** Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Business Management-Poole COM Baumer, David L Emeritus Professo Business Management-Poole COM Grad Faculty Baxter, Martin A Adjunct Assoc Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Baynes, Ronald E Professor Dept-Population, Health, Pathobi Grad Faculty Dept Molecular Biomedical Sci Beal.Candy M Assoc Professor TELS TELS Grad Faculty Bean, Eban Zachary Adjunct Asst Professor Biological And Agricultural En Affiliate Grad Faculty Biological And Agri Engr Beare, Zachary Charles Asst Professor English Grad Faculty English Agricultural & Human Sciences Bearon, Lucille B Assoc Professor Grad Faculty 4-H Youth Dev & Fam & Cons Sci Named Professor Beasley, Mark S Accounting-Poole COM **Grad Faculty** Accounting-Poole COM Electrical & Computer Engr. Becchi, Michela Assoc Professor Electrical & Computer Engr. **Grad Faculty** Beck PhD,Keith Russell Professor Textile Engineering, Chemistry **Grad Faculty** Textile Engr Chemistry & Sci Beck.Ashlev Esther Asst Professor Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Beckman.Gary Dean Teaching Professor Music Affiliate Grad Faculty Music Beckmann.Robert L. Plant and Microbial Biology **Grad Faculty** Grad Faculty Beckstead,Robert Byron Assoc Professor Prestage Poultry Science Prestage Poultry Science Bedair, Salah M. A. Named Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Begeny, John Charles Professor Psychology **Grad Faculty** Psychology Behnke, Andrew O Agricultural & Human Sciences **Grad Faculty** Beichner,Robert J Professor STEM:Science,Tech,Engin,&Math Grad Faculty Physics Assoc Professor Chemical & Biomolecular Engr. Beisel.Chase Chemical & Biomolecular Engr **Grad Faculty** Belcher.Scott M Assoc Professor **Biological Sciences** Grad Faculty **Biological Sciences Grad Faculty** Bell Jr, Bryan Assoc Professor Architecture Architecture Bell, Geoffrey Weszely Adjunct Asst Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Affiliate Grad Faculty Belmont, Patrick William Adjunct Asst Professor Marine, Earth And Atmospheric Marine Earth & Atmospheric Sci Benge, Drinda Elaine Teaching Asst Professor **Grad Faculty** English Grad Faculty English Bennett, Barbara A Professor Clinical Asst Professor Dept of Clinical Sciences Grad Faculty Dept of Clinical Sciences Bennett.Sara Lynn Benson, David M. Emeritus Professor Entomology & Plant Pathology Grad Faculty Entomology & Plant Pathology Benson, Geoffrey A. **Emeritus Professor** Ag & Resource Economics **Grad Faculty** Ag & Resource Economics Bereman, Michael S Asst Professor **Biological Sciences Grad Faculty Biological Sciences** Bereman, Robert D. **Emeritus Professor Grad Faculty** Chemistry Chemistry Civil Const & Environ Engineer Civil, Const & Env Engineering Berglund, Emily Zechman Professo **Grad Faculty** Bergmann PhD,Ben Andrew Horticultural Science Affiliate Grad Faculty Bernhard.Richard Harold Lecturer Fitts Dept Indust & Syst Engr **Grad Faculty** Fitts Dept Indust & Syst Engr Emeritus Professor Fitts Dept Indust & Syst Engr Grad Faculty Bernhard Richard Harold Fitts Dept Indust & Syst Engr **Grad Faculty** Bernholc.Jerzy Named Professor Physics **Physics** Berreth.Todd Michael Asst Professor Art and Design **Grad Faculty** Art and Design Berry-James, Rajade M Assoc Professor Public & International Affairs **Grad Faculty** Public & International Affairs Bertone, Matthew Alan Entomology & Plant Pathology Affiliate Grad Faculty Berube, David Michael Professor Communication **Grad Faculty** Communication Emeritus Professor Entomology & Plant Pathology Entomology & Plant Pathology Beute.Marvin K **Grad Faculty** Bhattacharva.Subhashish Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Asst Professor Bhawe.Nachiket Meghashvam Mgmt, Innovation&Entrepreneur **Grad Faculty** Mgmt, Innovation & Entrepreneu Bilderback, Theodore E. **Emeritus Professor** Horticultural Science **Grad Faculty** Horticultural Science Bilenkin,Vladimir Assoc Professor Foreign Languages And Literatu **Grad Faculty** Foreign Languages and Lit Binder, Andrew Ray Assoc Professo **Grad Faculty** Communication Bingham, William L. **Emeritus Associate Professor** Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Bird, Carolyn L. Professor Agricultural & Human Sciences **Grad Faculty** 4-H Youth Dev & Fam & Cons Sci Named Professor Entomology & Plant Pathology Entomology & Plant Pathology Bird.David M Grad Faculty Birgand, François Philippe Assoc Professor Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Birkenheuer, Adam Joseph Professor Dept of Clinical Sciences Grad Faculty Dept of Clinical Sciences Birkland, Thomas A Professor Dean's Office Research **Grad Faculty** Public & International Affairs Bishir, John William Emeritus Professor **Grad Faculty** Mathematics Mathematics Bishop,Paul Edward **Emeritus USDA Prof** Plant and Microbial Biology **Grad Faculty** Microbiology Bishop,Stuart Paul Marine Earth & Atmospheric Sci Asst Professor Marine, Earth And Atmospheric **Grad Faculty** Bitting.Paul F. Emeritus Associate Professor ELPHD **Grad Faculty** ELPHD Grad Faculty Bitzer.Donald L Distinguished University Prof Computer Science-engr Computer Science-Engr Bivins, Jason Caulfield Professor Philosophy & Religious Studies **Grad Faculty** Philosophy & Religious Studies Grad Faculty Bizikova,Petra Assoc Professor Dept of Clinical Sciences **Dept of Clinical Sciences** Bizios, Georgia **Grad Faculty** Emeritus Professo Architecture Architecture Black PhD, Tyler Ray Adjunct Asst Professor Applied Ecology Affiliate Grad Faculty Applied Ecology Professo **Biological Sciences Grad Faculty Biological Sciences** Black, Betty L. Teaching Assoc Professor Blacklev.Brian English **Grad Faculty** English Entomology & Plant Pathology Entomology & Plant Pathology Blaimer.Bonnie Bernadette Asst Professor **Grad Faculty** Adjunct Professor Marine Farth & Atmospheric Sci Blair Neal Edward Marine Farth And Atmospheric Affiliate Grad Faculty Blanchard, Margaret R. Professor Sci, Tech, Engr & Math (STEM) **Grad Faculty** Sci, Tech, Engr & Math (STEM) Bland, George F **Emeritus Associate Professor** Electrical & Computer Engr **Grad Faculty** Electrical & Computer Engr. Blank Jr, Philip E. **Emeritus Professor** English **Grad Faculty** English College of Natural Resources **Grad Faculty** For & Envir Res Acad Research Blank, Gary B. Assoc Professor Blankenship, Sylvia M. Dean's Office - CALS **Grad Faculty**

Plant and Microbial Biology

Grad Faculty

Plant and Microbial Biology

Blanton Richard L.

Professor

Blikslager Anthony T Professor Dent of Clinical Sciences Grad Faculty Dent of Clinical Sciences Blondin John Michael Professor Grad Faculty College of Sciences - Dean Physics Grad Faculty Bloom.Jessica Dara Asst Professor Agricultural & Human Sciences Agricultural & Human Sciences Bloomfield.Peter Emeritus Professor Statistics **Grad Faculty** Statistics Blum,Udo Emeritus Professor Plant and Microbial Biology **Grad Faculty** Plant and Microbial Biology Bobashev, Georgiy Adjunct Professor Statistics Affiliate Grad Faculty Statistics Bocarro, Jason N. Professor Parks, Recreation & Tourism Mg **Grad Faculty** Parks Recreation & Tourism Mg Research Asst Professor Bochinski, Jason Russell Physics **Grad Faculty** Physics Bociu.Lorena Viorica Assoc Professor Mathematics **Grad Faculty** Mathematics Boettcher III, William A Assoc Professor Public & International Affairs Public & International Affairs Grad Faculty Bogan, Arthur E Adjunct Professor Biological Sciences Affiliate Grad Faculty Biological Sciences Bogan, Arthur E Adjunct Asst Professor Applied Ecology Affiliate Grad Faculty Applied Ecology Bogan, Arthur E Adjunct Asst Professor Dept-Population, Health, Pathobi Affiliate Grad Faculty Applied Ecology Bogdanovich,Alexander Adjunct Professor Textile Engineering, Chemistry Affiliate Grad Faculty Textile Engr Chemistry & Sci Boggs, Belle McQuaide Assoc Professor English Grad Faculty English Boham Kenneth Arnold Adjunct Asst Professor ELPHD Affiliate Grad Faculty ELPHD Bohlmann, Jonathan D Professor Business Management-Poole COM Grad Faculty Business Management-Poole COM Bohnenstiehl.DelWayne R Professor Marine, Earth And Atmospheric Grad Faculty Marine Earth & Atmospheric Sci Bohorquez, Elaine B Teaching Asst Professor Physiology Program Grad Faculty Prestage Poultry Science Boles, Michael A. Assoc Professor Mechanical & Aerospace Engr Grad Faculty Mechanical & Aerospace Engr Teaching Asst Professor Bolger, Daniel Patrick **Grad Faculty** History Public & International Affairs Public & International Affairs Bolger, Daniel Patrick Teaching Asst Professor **Grad Faculty** Bollmer, Grant David Assoc Professor Communication **Grad Faculty** Communication Bolonvai PhD.Agnes Assoc Professor English Grad Faculty English Bolotnov.Igor A Assoc Professor Nuclear Engineering **Grad Faculty** Nuclear Engr Grad Faculty Bonagura, John David Clinical Assoc Professor **Dept of Clinical Sciences Dept of Clinical Sciences** Statistics Bondell, Howard D Adjunct Professor Statistics Grad & Temp **Grad Faculty** Population Health&Pathobiology Dept-Population, Health, Pathobi Bonin Ferreira, Juliana Lecturer **Grad Faculty** Bonner, James C Professo **Biological Sciences Grad Faculty Biological Sciences** Booker, Matthew Morse Assoc Professor History Grad Faculty History Adjunct Assoc Professor Agricultural & Human Sciences Affiliate Grad Faculty Agricultural & Extension Edu Boone, Deborah A Boone Kofi Malik Landscape Architecture Grad Faculty Landscape Architecture Professor Boos, Dennis D. Professor Statistics **Grad Faculty** Statistics Borden, Robert C. Emeritus Professor Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Civil Const & Environ Engineer Civil, Const & Env Engineering Borden, Roy H. **Emeritus Professor Grad Faculty** Bordoloi,Rongmon Asst Professor **Grad Faculty** Physics Physics Adjunct Professor Applied Ecology Affiliate Grad Faculty Applied Ecology Boreman Jr, John G. Research Professor Grad Faculty Borkowski.Kazimierz Physics **Physics** Borski, Russell J Professor **Biological Sciences** Grad Faculty **Biological Sciences** Grad Faculty Population Health&Pathobiology Borst, Luke B Assoc Professor Dept-Population, Health, Pathobi Boss, Charles B Assoc Professor Chemistry **Grad Faculty** Chemistry Boss, Wendy F. **Emeritus Named Professor** Plant and Microbial Biology **Grad Faculty** Plant and Microbial Biology Bostick Jr, George W. Agricultural & Human Sciences **Grad Faculty** Agricultural & Extension Edu Boston, Rebecca S. Named Distinguished Professor Administration - Research Serv Grad Faculty Plant and Microbial Biology Bottomlev.Laura J Teaching Assoc Professor Engineering-Academic Affairs **Grad Faculty** Electrical & Computer Engr. Electrical & Computer Engr. Teaching Assoc Professor Grad Faculty Bottomley, Laura J TFIS **Grad Faculty** Bourham, Mohamed Abdelhay Professor **Nuclear Engineering** Nuclear Engr Bowden, Alyshia Brooks FIPHD **Grad Faculty** Bowden, Edmond Francis Professor Chemistry **Grad Faculty** Chemistry Bowden, Jared Heath Applied Ecology Affiliate Grad Faculty Bowen, Sarah K Assoc Professor Sociology & Anthropology **Grad Faculty** Sociology & Anthropology Bowers Jr, Crowell G. Biological And Agricultural En Grad Faculty Emeritus Professor Biological And Agri Engr Assoc Professor Bowles.Tuere A ELPHD **Grad Faculty** ELPHD Bowman, Daniel C Crop & Soil Sciences Crop & Soil Sciences Professor **Grad Faculty** Bowman, Daryl T. **Emeritus Professor** Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Emeritus Professor Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Boyd, Leon Carl Boyd, Raymond Dean Adjunct Professor Animal Science Affiliate Grad Faculty Animal Science Boyer, Kristy Elizabeth Adjunct Assoc Professor Computer Science-engr Affiliate Grad Faculty Computer Science-Engr Named Professor Boyette, Michael D Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Teaching Asst Professor Affiliate Grad Faculty Boyles, James C. History History Ag & Resource Economics Ag & Resource Economics Boys, Kathryn Ann Asst Professor **Grad Faculty** Boyter Jr, Henry Alfred Adjunct Asst Professor Textile Engineering, Chemistry Affiliate Grad Faculty Textile Engr Chemistry & Sci Bozkurt,Alper Yusuf Assoc Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Braden, Jeffery P Professor College Of Humanities & Soc SC **Grad Faculty** Psychology Bradford, Marianne Professor Accounting-Poole COM **Grad Faculty** Accounting-Poole COM Bradford, Philip David Textile Engineering, Chemistry Textile Engr Chemistry & Sci Assoc Professo **Grad Faculty** Entomology & Plant Pathology Bradley Jr.Julius R. Emeritus Professor **Grad Faculty** Entomology Horticultural Science Bradley, Lucy K Professor Horticultural Science Grad Faculty Bradley, Michael Lee Adjunct Asst Professor Dept-Population, Health, Pathobi Affiliate Grad Faculty Population Health&Pathobiology Braga, Cristina Teaching Asst Professor ELPHD **Grad Faculty** ELPHD Bragg-Sitton, Shannon Michelle Adjunct Professor **Nuclear Engineering** Affiliate Grad Faculty Nuclear Engr Braham, Richard Riley Emeritus Professor For & Envir Res Acad Research **Grad Faculty** For & Envir Res Acad Research Braithwaite, Susan Smith Adjunct Asst Professor ELPHD Affiliate Grad Faculty ELPHD Brandeis, Susan D. Art and Design Professor Art and Design **Grad Faculty** Entomology & Plant Pathology Entomology & Plant Pathology Brandenburg, Rick Lynn Named Distinguished Professor **Grad Faculty** Brander, Bryan Adjunct Asst Professor FIPHD Affiliate Grad Faculty FIPHD Branoff,Theodore J Sci, Tech, Engr & Math (STEM) **Grad Faculty** Branson,Bruce C Professor Accounting-Poole COM **Grad Faculty** Accounting-Poole COM Braun, Scott Anthony Adjunct Assoc Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Braunbeck, Helga G Professor Foreign Languages And Literatu **Grad Faculty** Foreign Languages and Lit Brazel, Joseph F. Professor Accounting-Poole COM **Grad Faculty** Accounting-Poole COM

Dept Molecular Biomedical Scie

Grad Faculty

Dept Molecular Biomedical Sci

Breen, Matthew

Professor

USDA Professor Breidt Frederick Grad Faculty Food, Bioprocess & Nutrition Sc Food, Bioprocess & Nutrition Sc Grad Faculty Breitschwerdt Edward Bealmean Professor Dept of Clinical Sciences Dent of Clinical Sciences Brennan, Michael Adjunct Asst Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Brenner, Donald Wayne Named Distinguished Professor Materials Science & Engineering **Grad Faculty** Materials Science & Engineering Bressler.Eugene H Emeritus Professor Landscape Architecture Grad Faculty Landscape Architecture Breuhaus, Babetta Ann Assoc Professor **Dept of Clinical Sciences Grad Faculty** Population Health&Pathobiology Visiting Research Professor Brglez.Franc Computer Science-engr Affiliate Grad Faculty Computer Science-Engr Bridgwater, Floyd Emmitt USDA Professor For & Envir Res Acad Research **Grad Faculty** For & Envir Res Acad Research Brill Jr.Earl Downey Emeritus Professor Civil Const & Environ Engineer Grad Faculty Civil. Const & Env Engineering Brisson,Robert C. Emeritus Associate Professor Sociology & Anthropology Grad Faculty Sociology & Anthropology Bristol, David G. College of Sciences - Dean Affiliate Grad Faculty Brody,Arnold R. Research Professor Dept Molecular Biomedical Scie Affiliate Grad Faculty Dept Molecular Biomedical Sci Bromley,Peter T Emeritus Professor Applied Ecology **Grad Faculty** Applied Ecology Brookins, Craig C Assoc Professo Psychology Grad Faculty Psychology Entomology & Plant Pathology Brooks.Wayne M. Emeritus Professor Grad Faculty Entomology Broome, Stephen W. Professor Crop & Soil Sciences **Grad Faculty** Soil Science Brothers.Gene Leroy Assoc Professor Parks, Recreation & Tourism Mg Grad Faculty Parks Recreation & Tourism Mg Browdy, Ronisha Witlee Asst Professor English Grad Faculty English Brown Jr, Talmage T. Emeritus Professor Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Brown, Alvin B. Named Professor Ag & Resource Economics **Grad Faculty** Ag & Resource Economics Brown, Ashley Carson Asst Professor Biomedical Program - ENG Biomedical Program-Engineering **Grad Faculty** Plant and Microbial Biology Brown, Christopher S Adjunct Professor Affiliate Grad Faculty Plant and Microbial Biology Brown Dennis T Professor Riochemistry **Grad Faculty Biochemistry** Brown.Henry S **Emeritus Professor** Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci Grad Faculty Brown, James W Professor **Biological Sciences Biological Sciences** Brown, John D Professor **Grad Faculty** Physics Physics Research Professor NC Inst of Climate Studies Marine Earth & Atmospheric Sci Brown.Otis B **Grad Faculty** Brown,Robert D College of Natural Resources **Grad Faculty** Brown.Zachary Steven Asst Professor Ag & Resource Economics Grad Faculty Ag & Resource Economics Crop & Soil Sciences Brown-Guedira.Gina USDA Professor **Grad Faculty** Crop & Soil Sciences Horticultural Science Grad Faculty Brownie Cavel **Grad Faculty** Brownie, Cavell **Emeritus Professor** Statistics Statistics Brubaker,Erik Matthews Adjunct Assoc Professor Nuclear Engineering Affiliate Grad Faculty Nuclear Engi Agricultural & Extension Edu Bruce, Jacklyn A Assoc Professor Agricultural & Human Sciences **Grad Faculty** Bruck,Robert I. Entomology & Plant Pathology **Grad Faculty** Brudno PhD, Yevgeny Asst Professor Biomedical Program - ENG Grad Faculty Biomedical Program-Engineering Grad Faculty Bruneau.Arthur Henry Emeritus Professor Crop & Soil Sciences Crop & Soil Sciences Bruner PhD.David Allen Adjunct Professor Textile & Apparel, Technology Affiliate Grad Faculty Textile & Apparel Tech & Mgmt Grad Faculty Brunet, James R Assoc Professor Public & International Affairs Public & International Affairs History Bruno,Dean Teaching Asst Professor **Grad Faculty** History Bruno-Barcena, Jose Manuel Assoc Professor Plant and Microbial Biology **Grad Faculty** Plant and Microbial Biology Bryant, Jennifer Richmond Teaching Asst Professor For & Envir Res Acad Research **Grad Faculty** For & Envir Res Acad Research Bryant, Matthew Asst Professor Mechanical & Aerospace Engr Grad Faculty Mechanical & Aerospace Engr Buchler, Nicolas Emile Dept Molecular Biomedical Scie Dept Molecular Biomedical Sci Assoc Professor **Grad Faculty** Professor Biological Sciences Grad Faculty Biological Sciences **Buchwalter David Grad Faculty** Buckel, Jeffrey A. Professor Applied Ecology Applied Ecology Buckless.Frank Alan Orth Professor Dean's Office-Poole COM **Grad Faculty** Accounting-Poole COM Buckner, Gregory D Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Professor Budhathoki Uprety, Januka Asst Professor Textile Engineering, Chemistry **Grad Faculty** Textile Engr Chemistry & Sci Buhler, Wayne G Professor Horticultural Science **Grad Faculty** Horticultural Science Assoc Professor Graphic & Industrial Design Graphic & Industrial Design Buie.Timothy W **Grad Faculty** Bull.Leonard S Emeritus Professor Animal Science **Grad Faculty** Animal Science Bullard Lisa G Chemical & Biomolecular Engr Chemical & Biomolecular Engr. Teaching Professor Affiliate Grad Faculty Bullock, Karen Professor Social Work **Grad Faculty** Social Work Bulusu,Subrahmanyam Adjunct Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Bumgardner, Carl L. Professo **Grad Faculty** Bunds,Kyle S Asst Professor Parks, Recreation & Tourism Mg **Grad Faculty** Parks Recreation & Tourism Mg Buol, Stanley **Grad Faculty** Crop & Soil Sciences Emeritus Distinguished Prof Crop & Soil Sciences Soil Science **Buol.Stanley** Grad Faculty Affiliate Grad Faculty Buongiorno-Nardelli, Marco Adjunct Professor **Physics** Physics Burchell II.Michael R Assoc Professor Biological And Agricultural En Grad Faculty Biological And Agri Engr Burgess, Helen Jane Assoc Professor **Grad Faculty** English English Burke, Daniel Joseph **Biological Sciences Grad Faculty Biological Sciences** Professor Burke, Megan Jolane Clinical Asst Professor **Dept of Clinical Sciences Grad Faculty Dept of Clinical Sciences** Crop & Soil Sciences Crop & Soil Sciences Burkey.Kent Oliver USDA Professor **Grad Faculty** Burkhart. Harold Eugene Adjunct Professor For & Envir Res Acad Research Affiliate Grad Faculty For & Envir Res Acad Research Named Distinguished Professor Burkholder Joann M Applied Aquatic Ecology Center Grad Faculty Applied Ecology Affiliate Grad Faculty Burleson, Gary Ray Adjunct Professor Dept of Clinical Sciences **Dept of Clinical Sciences** Burnette, Jennifer Leslie Assoc Professor Psychology **Grad Faculty** Psychology Entomology & Plant Pathology Burrack, Hannah J Entomology & Plant Pathology **Grad Faculty** Professo Burton, James D. Horticultural Science **Grad Faculty** Burton, Joseph William Emeritus USDA Prof Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Busch, Kirstin Collette Rogis Sci, Tech, Engr & Math (STEM) Grad Faculty Sci, Tech, Engr & Math (STEM) Asst Professor Teaching Assoc Professor Affiliate Grad Faculty Bush.Kimberly Ann Parks, Recreation & Tourism Mg Parks Recreation & Tourism Mg Dairy Records Processing Affiliate Grad Faculty Butcher Kenneth Roy Bykova, Marina F. Professor Philosophy & Religious Studies **Grad Faculty** Philosophy & Religious Studies Byrd, Christy Michelle Asst Professor **Grad Faculty** TELS Byrd, Gregory T Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Byrd, Medwick V Teaching Assoc Professor Forest Biomaterials Affiliate Grad Faculty Forest Biomaterials Byrne, Paul Kevin Assoc Professor Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci

Asst Professor

Civil Const & Environ Engineer

Grad Faculty

Civil, Const & Env Engineering

Adjunct Professor

Civil Const & Environ Engineer

Affiliate Grad Faculty

Civil Const & Env Engineering

Breen Michael Scott

Cabas Mijares, Ashly Margot

Caddell PhD Joseph William Cahoon Charles William Caldwell Peter Vernon Calkins, Margaret Evans Call, Douglas Franklin Callahan.Benjamin John Callanan, Roger A. Callaway, Robert David Campbell, Jennifer L Campbell, Stephen LaVern Campbell, William V. Caner, Mehmet Caner.Turanav Cannon, Ronald Eugene Cannon, Ronald Eugene Cannon.Sarah Cannon, Susan C Cantrell.Keri B Cao,Jie Cao,Linyou Capanema,Ewellyn A Caple, Patricia C. Caplen.Natasha Jane Carawan.Rov E. Carbone.Ignazio Carbone, Mary Anna Carbonell, Ruben G. Cardinal, Andrea J Cardoza, Yasmin Judith Carlson, Gerald A. Carlton.Ann Marie Grover Carmichael Halbert H Carr,Jon Carrier,Sarah J Carroll Jr, Daniel E Carroll,John W Carson, Susan B. Cartee Lianne A. Carter Jr. George L Carter, Glenda S. Carter, Michael P. Carter, Thomas A. Carter, Thomas E. Caruolo, Edward V. Carver II.William Sidney Carver.Donna K. Case, Daniel Troy Casey, David S. Casey, Warren Michael Cason, Franklin D Casper, Jonathan M Cass,Cheryl Parzel Cassel.Donald K. Cassill PhD.Nancy Louise Castellano, Felix Nicholas Castillo, Miguel Sebastian Castorena, Cassandra Alison Castro Bolinaga, Celso Francisco Catignani, George L. Cavanagh, John Cawthon, Tony W Caye PhD, Joanne Snyder Chabay, Ruth W. Chakrabortty, Aranya Champion, Brenda D Chandler, Richard E. Chang, Chih-Hao Chang, Hou-Min Chang, Simon W. Chang, Wei-Chen Chao, Allen C. Chapman, Benjamin James Chapman,Diane D Chapman,Lisa McNew Chapman.Stephen N Charlton Harvey Johnson Charney, Joseph J Chen,Crystal Chen,Karen Boru Chen,Wei

Chen, Yuang Sung Al Cheng, Jay Jiayang

Adjunct Asst Professor History Crop & Soil Sciences Asst Professor Adjunct Asst Professor Professor Landscape Architecture Asst Professor Asst Professor Student Conduct Adjunct Asst Professor Teaching Assoc Professor **Biological Sciences** Professor Mathematics Emeritus Professor Named Professor Economics-Poole COM Assoc Professo Adjunct Professor **Biological Sciences** Adjunct Asst Professor Genetics Teaching Asst Professor TELS Architecture Adjunct Asst Professor Asst Professor Applied Ecology Assoc Professor Adjunct Assoc Professor Forest Biomaterials Emeritus Associate Professor Communication Adjunct Professor Emeritus Professor Professor Research Asst Professor **Biological Sciences** Named Distinguished Professor Crop & Soil Sciences Adjunct Professor Emeritus Professor Adjunct Asst Professor Emeritus Professor Chemistry Named Distinguished Professor Assoc Professo Emeritus Professor Professo Professor Teaching Assoc Professor Emeritus Professor **Emeritus Associate Professor** Professor Emeritus Professor USDA Professo Crop & Soil Sciences Emeritus Professor Animal Science ELPHD Adjunct Asst Professor Professor Professor Adjunct Asst Professor Animal Science Adjunct Assoc Professor Microbiology Asst Professor Assoc Professor Adjunct Assoc Professor Crop & Soil Sciences Emeritus Professor Academic Programs Professor Chemistry Assoc Professor Crop & Soil Sciences Assoc Professor Asst Professor **Emeritus Professor** Research Professor Biochemistry ELPHD Professor FIPHD Adjunct Asst Professor **Emeritus Professor** Physics Assoc Professor Teaching Asst Professor ELPHD Mathematics Emeritus Professor Assoc Professor

Emeritus Professor

Emeritus Associate Professor

Emeritus Associate Professor

TELS

Adjunct Professor

Asst Professor

Assoc Professor

Asst Professor

Asst Professor

Lecture

Professor

Professor

Teaching Professor

Adjunct Asst Professor

Emeritus Asst Professor

Adjunct Asst Professor

Grad Faculty For & Envir Res Acad Research Affiliate Grad Faculty **Grad Faculty** Civil Const & Environ Engineer Dept-Population.Health.Pathobi Electrical & Computer Engr. Entomology & Plant Pathology Mgmt. Innovation&Entrepreneur Biological And Agricultural En Materials Science & Engineering Dept-Population.Health.Pathobi Food, Bioprocess & Nutrition Sc Entomology & Plant Pathology BTEC-Biomfg Training Ed Ctr Entomology & Plant Pathology Ag & Resource Economics Marine, Earth And Atmospheric Mgmt, Innovation&Entrepreneur Food, Bioprocess & Nutrition Sc Philosophy & Religious Studies Quality Enhancement Plan Biomedical Program - ENG Adult & Higher Education Sci, Tech, Engr & Math (STEM) Graduate School-Dean's Office Prestage Poultry Science Prestage Poultry Science Sociology & Anthropology Parks, Recreation & Tourism Mg Materials Science & Engineering Civil Const & Environ Engineer Biological And Agricultural En Food, Bioprocess & Nutrition Sc Electrical & Computer Engr. Mechanical & Aerospace Engr Forest Biomaterials Marine, Earth And Atmospheric Chemistry Civil Const & Environ Engineer Agricultural & Human Sciences FIPHD **Business Management-Poole COM** Mathematics Marine, Earth And Atmospheric Fitts Dept Indust & Syst Engr Mathematics Accounting-Poole COM Biological And Agricultural En

Landscape Architecture **Grad Faculty** Civil, Const & Env Engineering **Grad Faculty** Dept Molecular Biomedical Sci Affiliate Grad Faculty Electrical & Computer Engr. Affiliate Grad Faculty **Grad Faculty** Biological Sciences Grad Faculty Mathematics Grad Faculty Entomology **Grad Faculty** Economics-Poole COM Affiliate Grad Faculty Mgmt, Innovation & Entrepreneu Affiliate Grad Faculty **Biological Sciences** Affiliate Grad Faculty Genetics Grad Faculty TELS Affiliate Grad Faculty Affiliate Grad Faculty Biological And Agri Engr Grad Faculty Applied Ecology Grad Faculty Materials Science & Engineering Forest Biomaterials Affiliate Grad Faculty Grad Faculty Communication Affiliate Grad Faculty Population Health&Pathobiology Grad Faculty Food, Bioprocess & Nutrition Sc **Grad Faculty** Entomology & Plant Pathology Affiliate Grad Faculty Biological Sciences **Grad Faculty** Chemical & Biomolecular Engr. **Grad Faculty** Affiliate Grad Faculty Entomology & Plant Pathology Grad Faculty Ag & Resource Economics Affiliate Grad Faculty Marine Earth & Atmospheric Sci Grad Faculty Chemistry **Grad Faculty** Business Management-Poole COM **Grad Faculty** Elementary Education **Grad Faculty** Food, Bioprocess & Nutrition Sc **Grad Faculty** Philosophy & Religious Studies Plant and Microbial Biology **Grad Faculty** Affiliate Grad Faculty Biomedical Program-Engineering Grad Faculty Adult & Higher Education **Grad Faculty** Sci, Tech, Engr & Math (STEM) **Grad Faculty** English **Grad Faculty** Prestage Poultry Science **Grad Faculty** Crop & Soil Sciences Grad Faculty Animal Science ELPHD Affiliate Grad Faculty Prestage Poultry Science Grad Faculty **Grad Faculty** Sociology & Anthropology Affiliate Grad Faculty Animal Science Affiliate Grad Faculty Microbiology **Grad Faculty** English **Grad Faculty** Parks Recreation & Tourism Mg Affiliate Grad Faculty Materials Science & Engineering **Grad Faculty** Soil Science Grad Faculty **Grad Faculty** Chemistry **Grad Faculty** Crop & Soil Sciences **Grad Faculty** Civil, Const & Env Engineering **Grad Faculty** Biological And Agri Engr Food, Bioprocess & Nutrition Sc **Grad Faculty** Grad Faculty Biochemistry Grad Faculty ELPHD Affiliate Grad Faculty ELPHD **Grad Faculty Physics Grad Faculty** Electrical & Computer Engr. Affiliate Grad Faculty ELPHD **Grad Faculty** Mathematics Mechanical & Aerospace Engr **Grad Faculty** Grad Faculty Forest Biomaterials Affiliate Grad Faculty Marine Earth & Atmospheric Sci Chemistry **Grad Faculty Grad Faculty** Civil, Const & Env Engineering **Grad Faculty** 4-H Youth Dev & Fam & Cons Sci **Grad Faculty** Affiliate Grad Faculty ELPHD **Grad Faculty** Business Management-Poole COM Grad Faculty Mathematics Affiliate Grad Faculty Marine Earth & Atmospheric Sci **Grad Faculty** TELS **Grad Faculty** Fitts Dept Indust & Syst Engr Affiliate Grad Faculty Mathematics **Grad Faculty** Accounting-Poole COM Grad Faculty Biological And Agri Engr

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History

Crop & Soil Sciences

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Asst Professor Grad Faculty Cheng.Yang Communication Communication Grad Faculty Cherry.Megan L Asst Professor History History Chertock,Alina Emil Professor Mathematics **Grad Faculty** Mathematics Chescheir III, George Maynard Emeritus Research Assoc Prof Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Cheshire.Heather Mcrae For & Envir Res Acad Research **Grad Faculty** Chi,Eric Culbert Asst Professor Statistics **Grad Faculty** Statistics Computer Science-Engr Chi.Min Asst Professor Computer Science-engr **Grad Faculty** Chiang.Vincent L C Emeritus Distinguished Prof For & Envir Res Acad Research For & Envir Res Acad Research **Grad Faculty** Childs.Nicole Marie Teaching Asst Professor FIPHD **Grad Faculty** FIPHD Chinn.Mari S Professor Biological And Agricultural En Grad Faculty Biological And Agri Engr Chirkova,Rada Yuryevna Professor Computer Science-engr **Grad Faculty** Computer Science-Engr Cho, Seong Hee Asst Professor Psychology Grad Faculty Psychology Cho,Soolyeon Assoc Professor Architecture **Grad Faculty** Architecture Choct, Mingan Adjunct Professor Prestage Poultry Science Affiliate Grad Faculty Prestage Poultry Science Chou.Wu-show Emeritus Professor Computer Science-engr Grad Faculty Computer Science-Engr Electrical & Computer Engr. Chow.Mo-Yuen Professor Grad Faculty Electrical & Computer Engr. Christensen, Vern L. Emeritus Professor Prestage Poultry Science Grad Faculty Prestage Poultry Science Christiansen.Emily Fenimore Adjunct Asst Professor Dept of Clinical Sciences Affiliate Grad Faculty Dept of Clinical Sciences Chu, Moody Ten-Chao Professo Mathematics **Grad Faculty** Mathematics Emeritus Professor Chukwu, Ethelbert N. Mathematics **Grad Faculty** Mathematics Emeritus Professor Grad Faculty Physics Chung.Kwong T. 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Affiliate Grad Faculty Coggburn, Jerrell D Professor Public & International Affairs Grad Faculty Public & International Affairs Entomology & Plant Pathology Research Professor Affiliate Grad Faculty Cohen, Allen C Entomology & Plant Pathology Cohen Io-Ann D Mathematics Grad Faculty Professor Mathematics Named Professor Cohen.Paul Fitts Dept Indust & Syst Engr **Grad Faculty** Fitts Dept Indust & Syst Engr Cole-Husseini, Jacqueline Asst Professor Biomedical Program - ENG **Grad Faculty** Biomedical Program-Engineering Coll-Barreu, Juan Architecture **Grad Faculty** Collazo, Jaime A USDI Professor Applied Ecology **Grad Faculty** Applied Ecology Collazo,Ramon R Assoc Professor Materials Science & Engineering **Grad Faculty** Materials Science & Engineering Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Colle.Brian A Adjunct Professor Extension Associate Professor Collins.Guv David Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Collins.William K **Emeritus Named Professor** Crop & Soil Sciences Combettes, Patrick Louis Professor Mathematics **Grad Faculty** Mathematics Comins, Daniel L Emeritus Professor Chemistry **Grad Faculty** Chemistry Philosophy & Religious Studies Philosophy & Religious Studies Comstock, Gary I Professo **Grad Faculty** Conant, Gavin Clay Assoc Professor **Biological Sciences Grad Faculty Biological Sciences** Named Distinguished Univ Prof Sci, Tech, Engr & Math (STEM) Sci, Tech, Engr & Math (STEM) Confrey,Jere **Grad Faculty** Emeritus Professor Conrad.Hans Materials Science & Engineering Grad Faculty Materials Science & Engineering Grad Faculty Cook Jr, James W Emeritus Professor Physics **Physics** Cook, Rachel Louise Asst Professor The Forest Nutrition Cooperati Grad Faculty For & Envir Res Acad Research Cooke, James A Adjunct Asst Professor Mechanical & Aerospace Engr Affiliate Grad Faculty Mechanical & Aerospace Engr Cooke, Natalie Kathleen Teaching Asst Professor Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Cooper, Andrew A. 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Professor

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Named Professor Foreign Languages And Literatu Dayton, Paul A Biomedical Program - ENG Professor De Gezelle Jillian Marie Teaching Asst Professor Plant and Microbial Biology De Los Reyes III,Francis Lajara Professor Civil Const & Environ Engineer DeBord, Karen B Emeritus Professor Agricultural & Human Sciences DeCarolis.Joseph F Assoc Professor Civil Const & Environ Engineer DeCoster.Stacv Assoc Professor Sociology & Anthropology DeCuir-Gunby, Jessica Theresa Professor TFIS DeFrancesco,Teresa C Professor **Dept of Clinical Sciences** DeGrand,Alexander J Emeritus Professor History Horticultural Science DeHertogh, August A. **Emeritus Professor** Emeritus Associate Professor DeJoy.Daniel A. Communication DeLuca.V. William Sci. Tech. Engr & Math (STEM) DeLuca.V. 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Emeritus Professor Entomology & Plant Pathology Dekaney PhD, Christopher Matthew Asst Professor Dept Molecular Biomedical Scie Delborne Jason Aaron Assoc Professor For & Envir Res Acad Research Teaching Asst Professor Delcambre.Carla F Landscape Architecture Delgado PhD,Cesar Assoc Professor Sci, Tech, Engr & Math (STEM) Delk,Katherine Adjunct Asst Professor **Dept of Clinical Sciences** Dellafave,L. Richard Emeritus Professor Sociology & Anthropology Deming, Margaret Elen Doctor of Design DenHartog,Emiel A Assoc Professor Textile Engineering, Chemistry Dennis.Robert G Assoc Professor Biomedical Program - ENG Sci, Tech, Engr & Math (STFM) Denson.Cameron DeLeon Assoc Professor Denton,Brian Adjunct Assoc Professor Fitts Dept Indust & Syst Engr Desmarais, Sarah Louise Assoc Professor Ctr Fam & Community Engagement Despain, Jeffrey Scott Assoc Professor Foreign Languages And Literatu Devetsikiotis.Mihai Adjunct Professor Electrical & Computer Engr. Devine Jr, Hugh A. **Emeritus Professor** Parks, Recreation & Tourism Mg Mgmt, Innovation&Entrepreneur Devine.Genessa Marie Lecture Devorshak,Christina Adjunct Asst Professor Entomology & Plant Pathology Dewey, Ralph E Named Professor Crop & Soil Sciences Dewhirst, Mark W Adjunct Professor Dept Molecular Biomedical Scie Diaz,Lope Max Assoc Professor Art and Design Dickey, Elizabeth Carol Materials Science & Engineering Dickey, Michael David Named Professor Chemical & Biomolecular Engr **Emeritus Associate Professor** English Dicks,Robert S Dickson.Gary W Emeritus Professor Business Management-Poole COM Diebold, Jeffrey Childress Asst Professor Public & International Affairs Dietrich, Joel Casey Asst Professor Civil Const & Environ Engineer Dillard,Emmett Urcey **Emeritus Associate Professor** Animal Science Ding, Huiling Assoc Professor English Dinh, Nam Truc Professor **Nuclear Engineering** Dinku, Abay Gadisa Research Asst Professor Physics Ditto.William Lawrence Professor Physics Diuguid.Katherine Ann Art and Design Dixon.Darlene Adjunct Assoc Professor Dept Molecular Biomedical Scient Dixon, Karrie Gibson Adjunct Asst Professor ELPHD Dobrogosz, Walter J. 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Dougherty Daniel B Assoc Professor Physics Grad Faculty Physics Named Distinguished Univ Prof Mechanical & Aerospace Engr Grad Faculty Mechanical & Aerospace Engr Dow Thomas A Grad Faculty Downs.Murray S. Emeritus Professor Exec Vice Chancellor & Provost History Doyle,Jon Named Distinguished Professor Computer Science-engi **Grad Faculty** Computer Science-Engr Drake, Mary Anne Named Professor Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Drake.Timothy Arthur Asst Professor **Grad Faculty** ELPHD Dept Molecular Biomedical Scie Dreher, Kevin L Adjunct Professor Affiliate Grad Faculty Dept Molecular Biomedical Sci Computer Science-Engr Dreher, Patrick A Research Professor Computer Science-engr **Grad Faculty** Business Management-Poole COM Business Management-Poole COM Dretsch.Heather Johnson Asst Professor **Grad Faculty** Drewes Donald William Emeritus Professor Psychology **Grad Faculty** Driscoll.Catherine M Professor Philosophy & Religious Studies Grad Faculty Philosophy & Religious Studies Duan,Xiaolin Asst Professor **Grad Faculty** History History Philosophy & Religious Studies Dubljevic, Veljko Asst Professor Philosophy & Religious Studies Grad Faculty Duca, Alina Nicoleta Teaching Professor Mathematics Affiliate Grad Faculty Mathematics Soil Science Duckworth,Owen W Professor Crop & Soil Sciences Grad Faculty Ducoste Joel Professor Civil Const & Environ Engineer Grad Faculty Civil. Const & Env Engineering Dudley, Marc K. Assoc Professor English **Grad Faculty** English Dudziak.Donald I. Emeritus Professor **Nuclear Engineering** Grad Faculty Nuclear Engr Duel-Hallen, Alexandra Professor Electrical & Computer Engr. Grad Faculty Electrical & Computer Engr. Duffy, Daniel James Asst Professor Dept of Clinical Sciences Grad Faculty Dept of Clinical Sciences Biological And Agri Engr Dugba, Prince Noah Adjunct Assoc Professor Biological And Agricultural En Affiliate Grad Faculty Grad Faculty Statistics Duggins, Jonathan William Teaching Asst Professor Statistics ELPHD Dunbar, Adria Shipp Asst Professor **Grad Faculty** ELPHD Dunn Joseph C Emeritus Professor Mathematics Grad Faculty Mathematics Agricultural & Human Sciences 4-H Youth Dev & Fam & Cons Sci Dunn.Patricia C Professor **Grad Faculty** Applied Ecology Dunn,Robert R. Named Professor **Grad Faculty** Applied Ecology Dunne PhD, Jeffrey Colin Asst Professor Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences College Of Veterinary Medicine Clinical Assoc Professor Dept of Clinical Sciences Dunning, Dianne Affiliate Grad Faculty Dunning, Rebecca Diane Research Asst Professor Horticultural Science Affiliate Grad Faculty Horticultural Science Dunphy,Edward James Crop & Soil Sciences Grad Faculty Assoc Professor Economics-Poole COM Economics-Poole COM Dur.Umut **Grad Faculty** English English Durant Jack D Emeritus Professor Grad Faculty Dutta,Rudra Professor Computer Science-engr **Grad Faculty** Computer Science-Engr Dvorak, William Stephen Emeritus Professor CAMCORE-Cooperative **Grad Faculty** For & Envir Res Acad Research Dept of Clinical Sciences Dye, Janice A Adjunct Assoc Professor **Dept of Clinical Sciences** Affiliate Grad Faculty Dykstra, Michael Jack Emeritus Research Professor Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Dziak,Robert Paul Adjunct Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Eapen, Jacob Assoc Professor Nuclear Engineering Grad Faculty Nuclear Engr Early, Peter Joseph Clinical Professor Dept of Clinical Sciences Affiliate Grad Faculty Dept of Clinical Sciences Earp, Julia B Assoc Professor Business Management-Poole COM Grad Faculty Business Management-Poole COM Easley Jr, James E **Emeritus Professor** Ag & Resource Economics **Grad Faculty** Ag & Resource Economics Easterling, David R Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Adjunct Professor Eaton, Mitchell J Adjunct Asst Professor Applied Ecology **Grad Faculty** Applied Ecology Ebert, Kimberly Lynn Assoc Professor Sociology & Anthropology Grad Faculty Sociology & Anthropology Echekki.Tarek Professor Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Eckerlin Herbert Martin Emeritus Professor Mechanical & Aerospace Engr Grad Faculty Mechanical & Aerospace Engi Edens, Frank W. Professor Prestage Poultry Science **Grad Faculty** Prestage Poultry Science Affiliate Grad Faculty Eder.Brian K Lecture Marine, Earth And Atmospheric Marine Earth & Atmospheric Sci Edge,Billy L Professor of the Practice Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Edgington, Cynthia Page Teaching Asst Professor Sci, Tech, Engr & Math (STEM) **Grad Faculty** Sci, Tech, Engr & Math (STEM) Edmisten, Keith L Professor Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Edwards Jr, Jack Ray Mechanical & Aerospace Engr Professo **Grad Faculty** Mechanical & Aerospace Engr Edwards.Eric Charles Asst Professor Ag & Resource Economics **Grad Faculty** Ag & Resource Economics 4-H Youth Dev & Fam & Cons Sci Edwards.Harriett C Assoc Professor Agricultural & Human Sciences **Grad Faculty** Edwards, Linda McMurry **Emeritus Professor Grad Faculty** History History Edwards, Michael B Assoc Professor Parks, Recreation & Tourism Mg **Grad Faculty** Parks Recreation & Tourism Mg Efimenko, Kirill Research Assoc Professor Chemical & Biomolecular Engr Affiliate Grad Faculty Chemical & Biomolecular Engr. Eggleston, David B Professor Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci Assoc Professor Eischen, Jeffrey W Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Grad Faculty Animal Science Eisemann, Joan Professor Animal Science Emeritus Named Professor Animal Science Eisen, Eugene Animal Science **Grad Faculty** Ekkad, Srinath Varadarajan Named Professor Mechanical & Aerospace Engr Grad Faculty Mechanical & Aerospace Engr El-Masry, Nadia A Professor Materials Science & Engineering **Grad Faculty** Materials Science & Engineering El-Shafei, Ahmed Mohamed Professor Textile Engineering, Chemistry **Grad Faculty** Textile Engr Chemistry & Sci **Emeritus Professor** Textile & Apparel Tech & Mgmt El-Shiekh, Aly H Textile & Apparel, Technology **Grad Faculty** Elfenbein, Johanna Rebecca Dept of Clinical Sciences Dept of Clinical Sciences Asst Professor **Grad Faculty** Elhanafi.Driss BTEC-Biomfg Training Ed Ctr Affiliate Grad Faculty Emeritus Professor Elkan.Gerald Hugh Microbiology Grad Faculty Microbiology Elkan, Gerald Hugh **Emeritus Professor** Park Scholars **Grad Faculty** Microbiology Ellington, Grant H Extension Asst Professor Biological And Agricultural En Affiliate Grad Faculty Biological And Agri Engr Ellis, Alan Reid Asst Professor **Grad Faculty** Social Work Social Work Ellis,Jesse Aaron Assoc Professo Business Management-Poole COM **Grad Faculty** Business Management-Poole COM Ellison,Donald C **Emeritus Professor** Physics **Grad Faculty** Physics Ellovich, Risa S. Sociology & Anthropology Sociology & Anthropology Grad Faculty Ellson, Richard Wayne Affiliate Grad Faculty Lecturer Mathematics Mathematics Fllwood Fric I Emeritus Professor College of Natural Resources Grad Faculty Forest Biomaterials Elting, Mary Williard Asst Professor Physics **Grad Faculty Physics** Elvin,George Assoc Professor **Grad Faculty** Architecture Architecture Civil Const & Environ Engineer Ely,John F. **Emeritus Professor Grad Faculty** Civil, Const & Env Engineering Emanuel,Ryan E Assoc Professor For & Envir Res Acad Research **Grad Faculty** For & Envir Res Acad Research Emery, Donald Allen Graduate School-Dean's Office Crop & Soil Sciences **Emeritus Professor Grad Faculty**

Biological Sciences

Affiliate Grad Faculty

Emigh,Ted H.

Enck William H Ender Kenneth Lyle Enders.Jeffrev Richard Enders, Jeffrey Richard Endicott,Ronald P Engell, Miles Dean English, David J Ensign.Scott Howard Erchul.William P. Erdim,Burak Erickson, Edward W. Eroglu, Abdulkerim Esbenshade.Kenneth L. Escuti, Michael James Eservel, Deniz Esposito PhD, Debora A. Estes.Edmund A Estes Patricia A Etherton, Brian John Eun, Do Young Evans Jr, Robert O Evans.Robert Joseph Evans.Timothy Matthew Everman Wesley I Eward.William Curtis Fackler,Paul L. Fahrenholz, Adam Charles Fair.Barbara Faircloth.Susan C Falk, Elisabeth Streit Falter.Michelle Marie Fang.Shu-Cherng Fang, Tiegang Fang,Xiaolei Fantz, Paul R. Farin, Charlotte E Farkas, Brian E Farrier.Maurice H. Fasina. Yewande O. Fathi, Yahya Faulkner, Gary Doyle Faulkner, Valerie Ness Favorite, Jeffrey Alan Favorov,Oleg V Fedkiw.Peter S. Fedukovich Casie I Feeny, Thomas P. Felder, Richard M. Fell, Harrison George Fellner.Vivek Felts, James Vernon Feng.Jing Fenn.Molly A. Fenton, Suzanne Elizabeth Fenton, Suzanne Elizabeth Ferguson II, Stephen Clifford Ferguson, Scott N Ferket,Peter R. Fernandes, April Dawn Fernandez.Gina E Ferreira, Davis Fernandes Ferreira, Davis Fernandes Ferrier, Brad S Ferruzzi, Mario Giovanni Ferzli,Miriam G Figuers, Carol C Finch III.Arthur Eaton Findley.Daniel J. Fiori, Giuseppe Fischer,Jesse Robert Fish,Richard E Fisher, Douglas Fisher, John S. Fisher.Loren Ray Fisher.Matthew Bruce Fites.Roger C. Fitzgerald, Patrick J Fitzpatrick, David Charles Flammer,Keven Flath, David Joseph Fleener, Mattie Jayne

Fleisher Lloyd Norman

Assoc Professor Professor of the Practice Adjunct Research Assistant Pro Assoc Professor Teaching Assoc Professor Adjunct Asst Professor Adjunct Asst Professor Emeritus Professor Asst Professor Emeritus Professor Asst Professor Professo Professor Assoc Professor Asst Professor Emeritus Professor Research Assoc Professor Adjunct Asst Professor Professo Emeritus Professor Teaching Assoc Professor Adjunct Assoc Professor Assoc Professor Adjunct Asst Professor Professor Asst Professor Assoc Professor Adjunct Professor Teaching Asst Professor Asst Professor Named Professor Professor Asst Professor Emeritus Professor Professor Adjunct Professor Emeritus Professor Adjunct Asst Professor Professor **Emeritus Associate Professor** Teaching Assoc Professor Adjunct Professo Research Assoc Professor Professor Assoc Professor Professor **Emeritus Named Professor** Assoc Professor Professo Adjunct Asst Professor Assoc Professor Teaching Professor Adjunct Assoc Professor Adjunct Asst Professor Assoc Professor

Asst Professor Professor Adjunct Assoc Professor Adjunct Assoc Professor Professor Teaching Professor Adjunct Asst Professor Adjunct Professor Adjunct Asst Professor Assoc Professor Research Asst Professor **Emeritus Associate Professor** Emeritus Professor **Emeritus Professor** Named Professor Asst Professor Emeritus Professor Assoc Professor Teaching Asst Professor Professor **Emeritus Professor** Professor

Emeritus Professor

Named Distinguished Professor

Assoc Professo

Computer Science-engr Grad Faculty FIPHD METRIC Mass Spectrometry **Biological Sciences** Philosophy & Religious Studies **Grad Faculty Biological Sciences** Marine, Earth And Atmospheric Psvchology **Grad Faculty** Grad Faculty Architecture Economics-Poole COM Kannapolis Research Animal Science Electrical & Computer Engr. TELS Kannapolis Research Ag & Resource Economics **Biological Sciences** Marine, Earth And Atmospheric Electrical & Computer Engr. Biological And Agricultural En Electrical & Computer Engr. Civil Const & Environ Engineer Cron & Soil Sciences Dept of Clinical Sciences Ag & Resource Economics Prestage Poultry Science Horticultural Science Marine, Earth And Atmospheric TELS Fitts Dept Indust & Syst Engr Mechanical & Aerospace Engr Fitts Dept Indust & Syst Engr Horticultural Science Animal Science Food, Bioprocess & Nutrition Sc Entomology & Plant Pathology Prestage Poultry Science Fitts Dept Indust & Syst Engr Mathematics TELS **Nuclear Engineering** Biomedical Program - ENG Chemical & Biomolecular Engr Fnglish Foreign Languages And Literatu Chemical & Biomolecular Engr Ag & Resource Economics Animal Science Prestage Poultry Science Psychology Mathematics Dept-Population, Health. Pathobi **Biological Sciences** Philosophy & Religious Studies Mechanical & Aerospace Engr Prestage Poultry Science Sociology & Anthropology Horticultural Science Biochemistry Biochemistry Marine, Earth And Atmospheric Kannapolis Research **Biological Sciences** ELPHD Psvchology Institute For Trans Research & Economics-Poole COM Applied Ecology **Dept of Clinical Sciences** Economics-Poole COM

Civil Const & Environ Engineer

Biomedical Program - ENG

Plant and Microbial Biology

Dept of Clinical Sciences

Dept Molecular Biomedical Scie

Economics-Poole COM

Crop & Soil Sciences

Art and Design

Social Work

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Art and Design

Economics-Poole COM

Dept Molecular Biomedical Sci

Social Work Dept of Clinical Sciences

ELPHD

Computer Science-Engr

Fleming, Henry Pridgen Emeritus USDA Prof Food Bioprocess & Nutrition Sc Grad Faculty Food Bioprocess & Nutrition Sc Affiliate Grad Faculty Adjunct Asst Professor FIPHD Fleming, Jean E. Adult & Higher Education Grad Faculty Fleming, Joy Morgan Asst Professor Agricultural & Human Sciences Agricultural & Human Sciences Fletcher Jr,Oscar J Dept-Population, Health, Pathobi **Grad Faculty** Fletcher Jr,Oscar J **Emeritus Professor** Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Flickinger, Michael Carl Emeritus Professor Chemical & Biomolecular Engr **Grad Faculty** Chemical & Biomolecular Engr. Flinchum, Russell Alan Assoc Professor Graphic & Industrial Design **Grad Faculty** Graphic & Industrial Design Landscape Architecture Flink.Charles Albert **Grad Faculty** Flores.Kevin Bryant Asst Professor Mathematics **Grad Faculty** Mathematics Flowers IV William Lucas Named Professor Animal Science **Grad Faculty** Animal Science Flowers James Lee Emeritus Professor Agricultural & Human Sciences Grad Faculty Agricultural & Human Sciences Clinical Professor Dept-Population, Health, Pathobi Affiliate Grad Faculty Population Health&Pathobiology Flowers, James R Floyd.Brian Allan Professo Electrical & Computer Engr Grad Faculty Electrical & Computer Engr. Floyd, Myron F Professor Parks, Recreation & Tourism Mg **Grad Faculty** Parks Recreation & Tourism Mg Fodor, Ronald Victor Emeritus Professor Marine, Earth And Atmospheric Grad Faculty Marine Earth & Atmospheric Sci Fogle, Callie Anne Clinical Assoc Professor Dept of Clinical Sciences Affiliate Grad Faculty Dept of Clinical Sciences Dept-Population, Health, Pathobi Fogle, Jonathan E. Assoc Professor Grad Faculty Population Health&Pathobiology Fogleman, April Assoc Professor Food, Bioprocess & Nutrition Sc Grad Faculty Food, Bioprocess & Nutrition Sc Fonteno III.William Carl Professor Horticultural Science Grad Faculty Horticultural Science Foote,Vincent Emeritus Professor Industrial Design **Grad Faculty** Industrial Design Asst Professor Textile Engr Chemistry & Sci Ford, Ericka N Textile Engineering, Chemistry **Grad Faculty** Ford, Richard Banbury Emeritus Professor Dept of Clinical Sciences Dept of Clinical Sciences **Grad Faculty** Forest.M. Gregory Professor Biomedical Program - ENG **Grad Faculty** Biomedical Program-Engineering Fornaro Robert Joseph Emeritus Professor Computer Science-engi Grad Faculty Computer Science-Engr Fornes.Raymond Earl Research Professor College of Sciences - Dean **Grad Faculty** Physics Grad Faculty Fornes, Raymond Earl **Emeritus Professor** College of Sciences - Dean Forrester, Jodi Anne Asst Professor For & Envir Res Acad Research **Grad Faculty** For & Envir Res Acad Research Fortner, Brand Irving Teaching Professor Physics **Grad Faculty** Physics Foster, Derek M Assoc Professor Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Foster,Lori Lea Professor Psychology Grad Faculty Psvchology Fountain.John Crothers Research Professor Marine, Earth And Atmospheric Marine Earth & Atmospheric Sci **Grad Faculty** Fountain.John Crothers Emeritus Professor Marine, Earth And Atmospheric Grad Faculty Marine Earth & Atmospheric Sci Chemistry Fourches, Denis Asst Professor Chemistry **Grad Faculty** Fox, Andrew Alan Assoc Professor Landscape Architecture **Grad Faculty** Landscape Architecture Fox, Barbara J. Emeritus Professor **Grad Faculty** Fox, Garey Alton Professor Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Fralix, Michael Thomas Adjunct Assoc Professor Affiliate Grad Faculty Textile & Apparel Tech & Mgmt Textile & Apparel, Technology For & Envir Res Acad Research Frampton Jr.Lewis John Emeritus Professor For & Envir Res Acad Research Grad Faculty Frank,Steven D Professor Entomology & Plant Pathology Grad Faculty Entomology & Plant Pathology Grad Faculty Franke, John E **Emeritus Professor** Mathematics Mathematics Franklin, E. Carlyle **Emeritus Professor** For & Envir Res Acad Research **Grad Faculty** For & Envir Res Acad Research Franks, Robert Graham Plant and Microbial Biology **Grad Faculty** Plant and Microbial Biology Professo Franz, Jason Roy Asst Professor Biomedical Program - ENG **Grad Faculty** Biomedical Program-Engineering Franzen,Stefan Professor Chemistry Grad Faculty Chemistry Franzluebbers.Alan J USDA Professor Crop & Soil Sciences **Grad Faculty** Soil Science Flectrical & Computer Engr. Distinguished Professor Electrical & Computer Engr. Grad Faculty Franzon Paul D **Grad Faculty** Frederick, Douglas J. Professor For & Envir Res Acad Research For & Envir Res Acad Research Freeh.Vincent W Assoc Professor Computer Science-engi **Grad Faculty** Computer Science-Engi Freeman, Harold S. Named Professor Textile Engineering, Chemistry **Grad Faculty** Textile Engr Chemistry & Sci Freitag, Sandria B Teaching Assoc Professor Affiliate Grad Faculty Frey, Gregory E Adjunct Asst Professor For & Envir Res Acad Research Affiliate Grad Faculty For & Envir Res Acad Research Distinguished University Prof Civil Const & Environ Engineer Frev.Henry C **Grad Faculty** Civil, Const & Env Engineering Freytes PhD, Donald Osvaldo Asst Professor Biomedical Program - ENG **Grad Faculty** Biomedical Program-Engineering Friend, Craig T Professor History Grad Faculty History Frohlich,Carla Assoc Professor Physics **Grad Faculty** Physics Frohlich,Flavio Adjunct Assoc Professor Electrical & Computer Engr. Affiliate Grad Faculty Electrical & Computer Engr. Frye, Bobbie Jean Adjunct Asst Professor Affiliate Grad Faculty Fuller,Frederick J. Professor Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Fulp, Ronald O. Professor Mathematics **Grad Faculty** Mathematics Fulp.Ronald O. Grad Faculty Mathematics Lecturer Mathematics Emeritus Professor Fulp,Ronald O. Mathematics **Grad Faculty** Mathematics Funkhouser, Edward T. **Emeritus Associate Professor** Communication Grad Faculty Communication Fusarelli, Bonnie C Professor ELPHD **Grad Faculty** ELPHD Fusarelli,Lance D. Professor ELPHD **Grad Faculty** ELPHD Fyfe, Margaret Simon Assoc Professor English **Grad Faculty** English English Fvfe.Paul Camm Assoc Professor **Grad Faculty** English Gabr.Mohammed Awad Distinguished Professor Civil Const & Environ Engineer **Grad Faculty** Civil. Const & Env Engineering Dent Molecular Biomedical Scie Grad Faculty Gadsby.John E. Professor Dept Molecular Biomedical Sci Galik.Christopher Assoc Professor Public & International Affairs **Grad Faculty** Public & International Affairs Grad Faculty Gallagher, Victoria J Professor Communication Communication Asst Professor Biomedical Program - ENG **Grad Faculty** Biomedical Program-Engineering Gallippi, Caterina M Gamcsik,Michael Assoc Professo Biomedical Program - ENG **Grad Faculty** Biomedical Program-Engineering Gannon, Travis W Assoc Professor Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Asst Professor Textile Engineering, Chemistry Textile Engr Chemistry & Sci Gao.Wei **Grad Faculty** Professor of the Practice ELPHD Garcia Jr.Revnaldo R **ELPHD Grad Faculty** Civil Const & Environ Engineer Civil, Const & Env Engineering Asst Professor Garcia Menendez.Fernando Grad Faculty Garcia, Kevin Asst Professor Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Gardner, Marian-Elizabeth B. Teaching Professor **Biological Sciences** Affiliate Grad Faculty **Biological Sciences** Horticultural Science Gardner, Randolph G. **Emeritus Professor** Horticultural Science **Grad Faculty** Gardner, Sarah Y. **Dept of Clinical Sciences Grad Faculty Emeritus Associate Professor** Dept of Clinical Sciences **Grad Faculty Dept of Clinical Sciences** Gardner, Sarah Y. Gardner.Terrence G Asst Professor Crop & Soil Sciences Grad Faculty Soil Science

Garland Genevieve Marie Garland.Genevieve Marie Garlich.Jimmy Dale Garoutte, Dennis E. Garrigan, Shelley E. Garson.George D Garval, Michael D Gasso.Santiago Gates.Terry Allen Gayles.Joy Gaston Gebreyes, Wondwossen A Gehringer, Edward F. Gelley.Ora Genereux, David Paul Genzer Jan Gerard, Mathew P. Gerig, Thomas Michael Gernat, Abel G. Getsinger,Kurt D Getzen,Forrest W Ghashghaei, Troy Ghiladi,Reza A Ghosh.Suiit K Ghosh.Tushar K Ghoshal.Subhashis Gibson, James L Gilbert, John H. Gilger,Brian C Gill.Carolina Gillan PhD, Douglas John Gilleskie.Gary Louis Gilliam PhD James Gilliam, James W. Gilligan, John G Gilmartin, David P. Gilmour, Matthew Ian Gimeno,Isabel M Ginn.George Warren Giraudel Jerome M Glass Jr, Joseph Conrad Glisson Jr, Tildon H Godfrey, A. Blanton Godwin, John R Gold, Harvey J. Goldberg, Richard L. Goldfarh Barry Goldstein, Irving S. Goller, Carlos Christopher Golub, Robert Gomez, Joseph A. Gomez, Shawn M. Gonzalez.Liara M Gonzalez.Maria Eugenia Gonzalez.Ronalds Wilfredo Gonzalez-Sullivan, Leila Goode, Larry Richard Goodell, Lora Suzanne Goodman, Major M. Goodnight, James Howard Goodwin, Barry K. Goodwin, Jean Elizabeth Gookin PhD, Jody L Gopalarathnam, Ashok Gordon PhD, Marsha Gabrielle Gordon, Tammrah S Gordy,Claire Lee Gorga, Russell E. Gorman, Christopher B Goshe, Michael B. Gosse, John Charles Gotwalt, Christopher M Gould, Christopher Robert Gould, Christopher Robert Gould.Fred L. Gould.Richard David Govoni John Jeffrey Gower, Stith Thompson Grabow,Garry L Grace,Landon Gracz,Hanna

Grady, Perry L.

Graham Stephen Edward

Adjunct Assoc Professor Research Asst Professor Emeritus Professor Emeritus Associate Professor Assoc Professor Professor Adjunct Asst Professor Lecturer Professo Assoc Professor Professor Assoc Professor Professor Distinguished Professor Teaching Professor Emeritus Professor Adjunct Asst Professor Adjunct Professor Emeritus Professor Professor Assoc Professor Professor Professor Distinguished Professor Adjunct Professor **Emeritus Associate Professor** Professor Assoc Professor Professor Teaching Assoc Professor Emeritus Named Distng'd Prof Distinguished University Prof Named Professor Adjunct Asst Professor Professor Teaching Asst Professor Adjunct Asst Professor **Emeritus Professor Emeritus Professor**

Named Distinguished Univ Prof Emeritus Professor Research Assoc Professor Emeritus Professor **Emeritus Professor** Teaching Asst Professor Professor Emeritus Professor Asst Professor Asst Professor Asst Professor Asst Professor Adjunct Professor Adjunct Assoc Professor Assoc Professo Distinguished University Prof Adjunct Professor Named Distinguished Professor Named Distinguished Professor Professor Professor Professor Professor Teaching Asst Professor Professor Professor Assoc Professor Adjunct Assoc Professor Adjunct Professor Lecture

Emeritus Professor Named Distinguished Professor Professor Adjunct Professor Professor Emeritus Professor Asst Professor

Research Assoc Professor

Emeritus Professor

Lecturer

Physics

Applied Ecology

Biochemistry

Entomology & Plant Pathology

Mechanical & Aerospace Engr

For & Envir Res Acad Research

Biological And Agricultural En

Mechanical & Aerospace Engr

Textile Engineering, Chemistry

For & Envir Res Acad Research

Textile & Annarel Technology Ofc of Research & Innovation Prestage Poultry Science Grad Faculty Mathematics **Grad Faculty** Foreign Languages And Literatu **Grad Faculty** Public & International Affairs **Grad Faculty** Foreign Languages And Literatu **Grad Faculty** Marine, Earth And Atmospheric **Biological Sciences Grad Faculty** FIPHD Dept-Population, Health, Pathobi Computer Science-engr English Marine, Earth And Atmospheric Chemical & Biomolecular Engr Dept Molecular Biomedical Scie Statistics Prestage Poultry Science Crop & Soil Sciences Chemistry Dept Molecular Biomedical Scie Chemistry Statistics Textile Engineering, Chemistry Statistics Horticultural Science Public & International Affairs Dept of Clinical Sciences Graphic & Industrial Design Psychology BTEC-Biomfg Training Ed Ctr **Biological Sciences** Crop & Soil Sciences College Of Engineering-dean's Dept-Population, Health, Pathobi Dept-Population, Health, Pathobi Graphic & Industrial Design Dept-Population.Health.Pathobi Adult & Higher Education Electrical & Computer Engr. Textile & Apparel, Technology **Biological Sciences** Statistics Biomedical Program - ENG For & Envir Res Acad Research Forest Biomaterials **Biological Sciences** Physics English Biomedical Program - ENG Dept of Clinical Sciences Agricultural & Human Sciences Forest Biomaterials Adult & Higher Education Civil Const & Environ Engineer Food, Bioprocess & Nutrition Sc Crop & Soil Sciences Statistics Ag & Resource Economics Communication Dept of Clinical Sciences Mechanical & Aerospace Engr English History **Biological Sciences** Textile Engineering, Chemistry Chemistry Biochemistry Marine, Earth And Atmospheric Statistics Physics

Grad Faculty Grad Faculty **Grad Faculty** Grad Faculty **Grad Faculty** Grad Faculty Affiliate Grad Faculty Grad Faculty Affiliate Grad Faculty Affiliate Grad Faculty **Grad Faculty Grad Faculty** Grad Faculty **Grad Faculty** Grad Faculty **Grad Faculty** Affiliate Grad Faculty **Grad Faculty Grad Faculty Grad Faculty** Grad Faculty **Grad Faculty** Grad Faculty **Grad Faculty Grad Faculty Grad Faculty** Affiliate Grad Faculty **Grad Faculty** Affiliate Grad Faculty Affiliate Grad Faculty Grad Faculty **Grad Faculty Grad Faculty Grad Faculty** Grad Faculty **Grad Faculty** Grad Faculty **Grad Faculty** Affiliate Grad Faculty **Grad Faculty Grad Faculty Grad Faculty** Grad Faculty **Grad Faculty** Grad Faculty Affiliate Grad Faculty Affiliate Grad Faculty **Grad Faculty Grad Faculty** Affiliate Grad Faculty Grad Faculty **Grad Faculty** Grad Faculty **Grad Faculty Grad Faculty Grad Faculty** Affiliate Grad Faculty **Grad Faculty** Grad Faculty **Grad Faculty** Affiliate Grad Faculty Affiliate Grad Faculty **Grad Faculty Grad Faculty Grad Faculty Grad Faculty** Affiliate Grad Faculty **Grad Faculty Grad Faculty Grad Faculty Grad Faculty Grad Faculty** Affiliate Grad Faculty

ELPHD

Statistics

English

History

Chemistry

Statistics

Physics

Physics

Applied Ecology

Biochemistry

Biochemistry

Civil, Const & Env Engineering

Food, Bioprocess & Nutrition Sc

Crop & Soil Sciences

Communication

Biological Sciences

Ag & Resource Economics

Dept of Clinical Sciences

Mechanical & Aerospace Engr

Textile Engr Chemistry & Sci

Marine Earth & Atmospheric Sci

Entomology & Plant Pathology

Mechanical & Aerospace Engr

For & Envir Res Acad Research

Mechanical & Aerospace Engr

Textile Engr Chemistry & Sci

For & Envir Res Acad Research

Biological And Agri Engr

Affiliate Grad Faculty Textile & Annarel Tech & Mgmt Affiliate Grad Faculty Textile Engr Chemistry & Sci Prestage Poultry Science Mathematics Foreign Languages and Lit Public & International Affairs Foreign Languages and Lit Affiliate Grad Faculty Marine Earth & Atmospheric Sci **Biological Sciences** FIPHD Population Health&Pathobiology Computer Science-Engr English Marine Earth & Atmospheric Sci Chemical & Biomolecular Engr. Dept of Clinical Sciences Statistics Prestage Poultry Science Crop & Soil Sciences Chemistry Dept Molecular Biomedical Sci Chemistry Statistics Textile Engr Chemistry & Sci Statistics Horticultural Science Public & International Affairs Dept of Clinical Sciences Graphic & Industrial Design Psychology Chemical & Biomolecular Engr. Soil Science Nuclear Engr History Dept Microbiology Path & Para Population Health&Pathobiology Graphic & Industrial Design Population Health&Pathobiology Adult & Higher Education Electrical & Computer Engr. Textile & Apparel Tech & Mgmt **Biological Sciences** Statistics Biomedical Program-Grad Appts For & Envir Res Acad Research Forest Biomaterials **Biological Sciences Physics** English Biomedical Program-Engineering Dept of Clinical Sciences Agricultural & Human Sciences Forest Biomaterials

Grainger John I Professor Flectrical & Computer Engr Grad Faculty Flectrical & Computer Engr Grad Faculty Granlund Kenneth Asst Professor Mechanical & Aerospace Engr Mechanical & Aerospace Engr Grant Christine S Professor College Of Engineering-dean's Grad Faculty Chemical & Biomolecular Engr. Grant.Edward Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr Grant, William Cullen **Emeritus Professor Biological Sciences** Affiliate Grad Faculty **Biological Sciences** Textile & Apparel, Technology Grasso, Maureen Professo **Grad Faculty** Textile & Apparel Tech & Mgmt Graves, Alexandria K Assoc Professor Crop & Soil Sciences **Grad Faculty** Soil Science Grad Faculty Grav.DeLeon L Assoc Professor TELS TELS Psychology Grav.Denis O Professor **Grad Faculty** Psychology Gray,Denis O. Emeritus Professor Psychology Psychology **Grad Faculty** Gray, Joshua Michael Asst Professor For & Envir Res Acad Research Grad Faculty For & Envir Res Acad Research Gray, Kent A Adjunct Asst Professor Animal Science Affiliate Grad Faculty Animal Science Green Jr. James T Emeritus Professo Crop & Soil Sciences Grad Faculty Crop & Soil Sciences Green, David Lindsay Adjunct Assoc Professor Nuclear Engineering Affiliate Grad Faculty Nuclear Engr Green, David Patrick **Emeritus Professor** Food, Bioprocess & Nutrition Sc Grad Faculty Food, Bioprocess & Nutrition Sc Green.Gary Martin Adjunct Asst Professor ELPHD Affiliate Grad Faculty ELPHD Green.Matthew Piron Asst Professor Physics Grad Faculty Physics Greenberg, Cathryn Hoben Adjunct Professor For & Envir Res Acad Research Affiliate Grad Faculty For & Envir Res Acad Research Greene, Donna Gayle Adjunct Asst Professor ELPHD Affiliate Grad Faculty ELPHD Greene, Steven H Professo Public & International Affairs **Grad Faculty** Public & International Affairs Greenstein, Theodore Neuman Professo Sociology & Anthropology **Grad Faculty** Sociology & Anthropology Emeritus Professor Grad Faculty Gregory.James D For & Envir Res Acad Research For & Envir Res Acad Research Gregory.Max E. Emeritus Professor Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Gremaud.Pierre Alain Professor Mathematics **Grad Faculty** Mathematics Grennes.Thomas J. **Emeritus Professor** Economics-Poole COM **Grad Faculty** Economics-Poole COM Grieshop,Andrew P Assoc Professor Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Grifenhagen, Jill Freiberg Asst Professor **Grad Faculty** Elementary Education TELS Griffin Sr,Ervin Verome Adjunct Asst Professor ELPHD Affiliate Grad Faculty ELPHD Griffin,Clifford E Assoc Professor Public & International Affairs **Grad Faculty** Public & International Affairs Griffis, Dieter P. Research Assoc Professor Textile Engineering, Chemistry Affiliate Grad Faculty Materials Science & Engineering Griffith.Emily Hohmeister Research Assoc Professor Statistics **Grad Faculty** Statistics Griggs, John Richard **Emeritus Teaching Assoc Prof** Mathematics Affiliate Grad Faculty Mathematics Grimes,Jesse Lee Professor Prestage Poultry Science **Grad Faculty** Prestage Poultry Science Grimmett, Marc Anderson Assoc Professor ELPHD **Grad Faculty** ELPHD Grimwood, James M. Professor English **Grad Faculty** English Grindem, Carol B. **Emeritus Professor** Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Grochowski, Colleen O'Connor Adjunct Asst Professor ELPHD Affiliate Grad Faculty Adult & Higher Education Gross.Charlotte English **Emeritus Professor** Grad Faculty English Gross, Harry D. Emeritus Professor Crop & Soil Sciences Grad Faculty Crop & Soil Sciences Grad Faculty Gross, Kevin Professor Statistics Statistics Gross, Ruth Vera Professor Foreign Languages And Literatu **Grad Faculty** Foreign Languages and Lit Applied Ecology Grossfeld,Robert M. **Emeritus Professor Grad Faculty** Applied Ecology Sociology & Anthropology Sociology & Anthropology Grossman, Kathryn Mary **Grad Faculty** Grove,Thurman L Emeritus Professor Applied Ecology Grad Faculty Applied Ecology Population Health&Pathobiology Gruber-Hollingshead, Erika Jane Dept-Population.Health.Pathobi Asst Professor **Grad Faculty** Gruehn Daniel Assoc Professor Grad Faculty Psychology Psychology Dept of Clinical Sciences **Grad Faculty** Gruen, Margaret Elizabeth Asst Professor **Dept of Clinical Sciences** Grunden, Amy Michele Named Professor Plant and Microbial Biology **Grad Faculty** Plant and Microbial Biology Gu,Xiaohui Computer Science-engr **Grad Faculty** Computer Science-Engr Assoc Professor Adjunct Assoc Professor Biomedical Program - ENG Biomedical Program-Engineering Gu.Zhen **Grad Faculty** Guarnieri, Charles Richard Materials Science & Engineering Affiliate Grad Faculty Named Distinguished Univ Prof Chemical & Biomolecular Engr Grad Faculty Chemical & Biomolecular Engr. Gubbins.Keith E Guddati.Murthy N. Professor Civil Const & Environ Engineer **Grad Faculty** Civil. Const & Env Engineering Adjunct Asst Professor **Grad Faculty** Guinness.Joseph Statistics Grad & Temp Statistics Guiteras, Raymond Patrick Asst Professor Ag & Resource Economics **Grad Faculty** Ag & Resource Economics Gulling, Dana Kathleen Assoc Professor Architecture **Grad Faculty** Architecture Gumpertz, Marcia Lynn Professo Statistics **Grad Faculty** Statistics Gundogdu,Kenan Assoc Professor Physics **Grad Faculty** Physics Horticultural Science Gunter, Christopher Professor Horticultural Science **Grad Faculty** Gupta.Abhinay Civil Const & Environ Engineer Grad Faculty Civil. Const & Env Engineering Professor Grad Faculty Gupta, Ajaya K. **Emeritus Professor** Civil Const & Environ Engineer Civil, Const & Env Engineering Gupta, Bhupender S **Emeritus Professor** Textile Engineering, Chemistry Grad Faculty Textile Engr Chemistry & Sci Gupta, Rachana Ashok Teaching Assoc Professor Electrical & Computer Engr. Affiliate Grad Faculty Electrical & Computer Engr. Gurgel,Patrick V Adjunct Asst Professor Chemical & Biomolecular Engr Affiliate Grad Faculty Chemical & Biomolecular Engr. Gusmini, Gabriele Adjunct Asst Professor Horticultural Science Affiliate Grad Faculty Horticultural Science Emeritus Associate Professor Parks, Recreation & Tourism Mg Grad Faculty Parks Recreation & Tourism Mg Gustke.Larry Douglas Guvenc.Ismail Assoc Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Dept-Population, Health, Pathobi Population Health&Pathobiology Guv.James S. Professor Grad Faculty Gwyer, Janet Lynn Adjunct Professor FIPHD Affiliate Grad Faculty FLPHD Physics Haase, David G Professor **Grad Faculty** Physics Haddad, Nicholas M Adjunct Professor Applied Ecology **Grad Faculty** Applied Ecology Sociology & Anthropology Sociology & Anthropology Haenn.Nora M Assoc Professo **Grad Faculty** Hagler, Winston Murry Emeritus Professor Prestage Poultry Science **Grad Faculty** Prestage Poultry Science Professor Haider, Mansoor Abbas Mathematics **Grad Faculty** Mathematics Crop & Soil Sciences Crop & Soil Sciences Haigler, Candace Hope Professor **Grad Faculty** Hain Frnst Frederick Ctr. for Geospatial Analytics Affiliate Grad Faculty For & Fnyir Res Acad Research Lecturer Hain, Fred P. **Emeritus Professor** Entomology & Plant Pathology **Grad Faculty** Entomology Hakovirta, Marko Juhani Professor Forest Biomaterials **Grad Faculty** Forest Biomaterials Halberstadt, Amy gene Professor Psychology **Grad Faculty** Psychology Hale,Francis J. Emeritus Professor Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Biological And Agricultural En **Grad Faculty** Hale,Scott A Professor Biological And Agri Engr

Mechanical & Aerospace Engr

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Hall Jr.Charles Edward

Assoc Professor

Hall Alastair R Professor Fronomics-Poole COM Grad Faculty Fronomics-Poole COM Hall Carol K Named Distinguished Univ Prof Chemical & Biomolecular Engr Grad Faculty Chemical & Biomolecular Engr. Hall.George L. Emeritus Professor Physics Grad Faculty Physics Hall.Jodi K Assoc Professor Social Work **Grad Faculty** Social Work Hall, Jonathan Russell Research Asst Professor **Biological Sciences** Affiliate Grad Faculty **Biological Sciences** Hall,Steven George Assoc Professor Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Hallen, Hans D Professor Physics **Grad Faculty** Physics Hallowell III, George Dewey Architecture Affiliate Grad Faculty Teaching Asst Professor Halweg, Christopher J **Biological Sciences** Affiliate Grad Faculty **Biological Sciences** Ham.Derek Allen Asst Professor Graphic & Industrial Design Grad Faculty Graphic & Industrial Design Hamilton, Paul T Assoc Professor Plant and Microbial Biology Grad Faculty Plant and Microbial Biology Hamilton,Peter Adjunct Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Hamilton, Steven Paul Adjunct Professor Mathematics Affiliate Grad Faculty Mathematics Hamme, John Valentine Emeritus Associate Professor Materials Science & Engineering **Grad Faculty** Materials Science & Engineering Hammerberg, Bruce Professor Dept-Population, Health, Pathobi Grad Faculty Population Health&Pathobiology Hammond.Robert Guthrie Economics-Poole COM Grad Faculty Entomology & Plant Pathology Hamon, Nicholas M. 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Emeritus Professor Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Heiniger.Ronnie William Crop & Soil Sciences Grad Faculty Crop & Soil Sciences Heise,Ryan J Adjunct Asst Professor Applied Ecology Affiliate Grad Faculty Applied Ecology Heitman, Joshua L Professor Crop & Soil Sciences Grad Faculty Soil Science Heitmann Jr.John A Emeritus Professor Forest Biomaterials Grad Faculty Forest Biomaterials Dept-Population, Health, Pathobi Population Health&Pathobiology Helman,Lee Jay Adjunct Professor Affiliate Grad Faculty Helminck, Alovsius G Professor Mathematics Grad Faculty Mathematics Henard David H Professor Business Management-Poole COM Grad Faculty Business Management-Poole COM Henderson,Barron Halton Adjunct Asst Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Henderson, Karla Ann Emeritus Professor Parks, Recreation & Tourism Mg **Grad Faculty** Parks Recreation & Tourism Mg Emeritus Professor Grad Faculty Horticultural Science Henderson.Warren R. Horticultural Science Hentz Jr.Forrest Clyde Emeritus Professor Chemistry **Grad Faculty** Chemistry Textile & Apparel, Technology Textile & Apparel Tech & Mgmt Hergeth.Helmut H Assoc Professor Grad Faculty Affiliate Grad Faculty Hernandez.Raquel Research Assoc Professor Biochemistry Biochemistry Hernandez,Ricardo Asst Professor Horticultural Science **Grad Faculty** Horticultural Science Herring, William O Adjunct Professor Animal Science Affiliate Grad Faculty Animal Science Hersh,Patricia L Professor Mathematics **Grad Faculty** Mathematics Hess, George R. Professo For & Envir Res Acad Research **Grad Faculty** Landscape Architecture Hess, Paul R Assoc Professor Dept of Clinical Sciences Grad Faculty Dept of Clinical Sciences Hess.Thomas M. Professor Psychology **Grad Faculty** Psychology Teaching Asst Professor FIPHD Grad Faculty FIPHD Hessling, Peter A Hesterberg, Dean L Named Professor Crop & Soil Sciences **Grad Faculty** Soil Science Hibbard, James Patrick Emeritus Professor Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci Hicklin, Karen Theodora Fitts Dept Indust & Syst Engr Fitts Dept Indust & Syst Engr Adjunct Asst Professor Affiliate Grad Faculty Hicks, Gregory Eugene Teaching Asst Professor **Grad Faculty** Hightower, Joseph E Emeritus Professor Applied Ecology Affiliate Grad Faculty Applied Ecology Architecture Grad Faculty Architecture Hill.David Brian Professor Emeritus Associate Professor Entomology & Plant Pathology Hillmann, Ruediger C. Grad Faculty Entomology Grad Faculty Horticultural Science Hinesley,Lewis E. **Emeritus Professor** Horticultural Science Hinks, David Named Professor College Of Textiles-dean's Off **Grad Faculty** Textile Engr Chemistry & Sci Hinshaw, Garrett Denton Adjunct Asst Professor ELPHD Affiliate Grad Faculty ELPHD Hinshaw, Jeffrey M. Professo Applied Ecology **Grad Faculty** Applied Ecology Hinton, Timothy J Professor Philosophy & Religious Studies Grad Faculty Philosophy & Religious Studies Hipp.James Aaron Assoc Professor Parks, Recreation & Tourism Mg **Grad Faculty** Parks Recreation & Tourism Mg Hobbs.Heidi H Assoc Professor Public & International Affairs Grad Faculty Public & International Affairs Hobgood Jr.Thomas N **Emeritus Professor** Administration - Extension Ser **Grad Faculty** Sociology And Anthropology Hodge, Gary Ray Professor CAMCORE-Cooperative **Grad Faculty** For & Envir Res Acad Research Hodge,George Lawrence Assoc Professor Textile Engineering, Chemistry **Grad Faculty** Textile Engr Chemistry & Sci Entomology & Plant Pathology Hodges, Charles S Visiting Professor **Grad Faculty** Entomology & Plant Pathology Hodgson,Thom Joel **Emeritus Named Professor** Fitts Dept Indust & Syst Engr **Grad Faculty** Fitts Dept Indust & Syst Engr Hodgson,Thomas H. Emeritus Professor Grad Faculty Mechanical & Aerospace Engr Mechanical & Aerospace Engr Hofelt, Christopher Scott Applied Ecology Affiliate Grad Faculty Hoffmann PhD, Kristin Fisher Clinical Asst Professor TFLS Affiliate Grad Faculty TELS Hoffmann PhD, Kristin Fisher Lecture TELS Affiliate Grad Faculty TELS Hoffmann,Mark Asst Professor Horticultural Science **Grad Faculty** Horticultural Science Hoffmann, William A Plant and Microbial Biology Professo **Grad Faculty** Plant and Microbial Biology Hoggan,Chad David Assoc Professor **Grad Faculty** Hoit,Marc I VC for Off of Info Technology Civil, Const & Env Engineering Professor **Grad Faculty** Adjunct Asst Professor Holder.Amara Lee Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Affiliate Grad Faculty Animal Science Animal Science Holl, Justin W Adjunct Asst Professor Holland James B USDA Professor Crop & Soil Sciences Grad Faculty Crop & Soil Sciences Hollar,Seth E Teaching Asst Professor Electrical & Computer Engr. **Grad Faculty** Mechanical & Aerospace Engr Hollebrands, Karen Flanagan Professor Sci, Tech, Engr & Math (STEM) **Grad Faculty** Sci, Tech, Engr & Math (STEM) **Emeritus Professor** Holley,Linda T. 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Emeritus Professor Horticultural Science **Grad Faculty** Horticultural Science Hooper, Percy Rivera Graphic & Industrial Design Grad Faculty Graphic & Industrial Design Assoc Professor Hope, Elan Asst Professor Psychology **Grad Faculty** Psychology Chemical & Biomolecular Engr Hopfenberg, Harold B. Emeritus Named Professor Grad Faculty Chemical & Biomolecular Engr. Hopkins, Brinton Alden Professor Animal Science **Grad Faculty Animal Science** Hopkins, Douglas C Research Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Research Professor Hopkins, Thomas Sawyer Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci Hoppin,Jane A Professor **Biological Sciences Grad Faculty Biological Sciences** Emeritus Professor Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Horie, Yasuyuki

Research Asst Professor

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Horn.Timothy Joseph

Horne Frin Thomas Horowitz Ionathan M Horton, Horace R Hou.Jia House, John S. Hoversten PhD,Mark Elison Howard, Anna Kathleen Tyler Howard, Kristina Elaine Howell.Garv W Hovo.Cathrine Hren John Joseph Hsiang,Simon M Hsiao Chien Ching Lilian Hsieh,Tzung Fu Hu.Jianxin Hu,Shuijin Hu, Xiaogang Hu, Yongxiang Huang,He Huang, Hsiao-Ying Shadow Huang, Jeng Sheng Huang,Qin Hubbe.Martin A Hubbell.Brvan J Hudson.Lola Carol Hudson, Peyton B Hudson,Samuel Mack Huffman,Paul R Huffman,Rodney L. Hughes, Brian L Hughes-Oliver.Jacqueline M. Hulse Amanda Marie Hunt III, William F Hunt Jr, Louis David Hunt, Heather Rose Shive Hunt, Jessica Heather Hunt, Marvin W Hunter.Steven Wade Huntington, Gerald B Hurley,Ryan J Husain, Igbal Huseth, Anders Schmidt Hyland, Ethan Gordon Hyman PhD,Michael Hyman, David N. Jafrate Gerald I liames Jr.John Shepherd Ingram.William G Intile DVM, Joanne Lynn lorizzo, Massimo Ipsen,Ilse Irving, Douglas Lee Irwin.Rebecca Elizabeth Isaacson.Nathaniel Kenneth Isik,Fikret Isleib,Thomas G. Ison, Elon Ayinde Israel, Daniel Wesley Istook,Cynthia L Ito.Kazufumi Ivanisevic.Albena Ivanov.Kostadin Nikolov Ivy,Julie Simmons Jackowski, Melissa Bristle Jackson, Brian Eugene Jackson, Denis Sherald Jackson.Steven D Jacob.Anna Margaret Jacob, Megan E Jaeger, Audrey J. Jahn,Larry G. Jaimes, Hector A Jakes,Susan S Jakes,Susan S Jakubikova.Elena Jameel Hasan James, April Lynda Jameson, Jessica Katz Jang,Carey Jaselskis, Edward J Jasper, Warren J Jayaratne, Koralalage Sunil Upali

College Of Education Ofc of Research & Innovation Biochemistry **Nuclear Engineering** Bioinformatics Res Ctr College of Design Mechanical & Aerospace Engr Dept Molecular Biomedical Scie Advanced Computing Biological Sciences Materials Science & Engineering Fitts Dept Indust & Syst Engr Chemical & Biomolecular Engr Plant and Microbial Biology Architecture Entomology & Plant Pathology Biomedical Program - ENG Marine, Earth And Atmospheric Biomedical Program - ENG Mechanical & Aerospace Engr Entomology & Plant Pathology Electrical & Computer Engr. Forest Biomaterials Ag & Resource Economics Dept Molecular Biomedical Scie Textile & Apparel, Technology Textile Engineering, Chemistry Physics Biological And Agricultural En Electrical & Computer Engr. Statistics Cron & Soil Sciences Biological And Agricultural En EMAS-Enrollment Mgt & Services Dept-Population, Health, Pathobi English Computer Science-engr Animal Science Communication Electrical & Computer Engr. Entomology & Plant Pathology Marine, Earth And Atmospheric Plant and Microbial Biology Economics-Poole COM Flectrical & Computer Engr For & Envir Res Acad Research FIPHD Dept of Clinical Sciences Horticultural Science Mathematics Materials Science & Engineering Applied Ecology Foreign Languages And Literatu Tree Improvement Cooperative Crop & Soil Sciences Crop & Soil Sciences Textile & Apparel, Technology Mathematics Materials Science & Engineering **Nuclear Engineering** Fitts Dept Indust & Syst Engr ELPHD Horticultural Science BTEC-Biomfg Training Ed Ctr Integrated Manufacturing Svs E FIPHD Dept-Population, Health, Pathobi FIPHD Forest Biomaterials Foreign Languages And Literatu Ag And Natural Resources/comm Psychology Chemistry Forest Biomaterials For & Envir Res Acad Research Communication Marine, Earth And Atmospheric Civil Const & Environ Engineer

Textile Engineering, Chemistry

Agricultural & Human Sciences

Clinical Asst Professor

Emeritus Named Distng'd Prof

Teaching Assoc Professor

Research Asst Professor

Emeritus Professor

Adjunct Professor

Asst Professor

Assoc Professor

Assoc Professor

Asst Professor

Assoc Professor

Emeritus Professor

Adjunct Professor

Named Professor

Emeritus Professor

LISDA Asst Professor

Adjunct Asst Professor

Adjunct Asst Professor

Emeritus Teaching Assoc Prof

Named Professor

Assoc Professor

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Asst Professor

Asst Professor

Professor

Professor

Named Professor

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Teaching Professor

Emeritus Professor

Assoc Professor

Named Professor

Extension Asst Professor

Extension Asst Professor

Adjunct Assoc Professor

Adjunct Assoc Professor

Distinguished Professor

Named Professor

Professor

Professor

Professor

Professor

Professor

Professor

Professor

Professor

Adjunct Asst Professor

Adjunct Asst Professor

Clinical Asst Professor

Adjunct Asst Professor

Emeritus Associate Professor

Emeritus Associate Professor

Adjunct Assoc Professor

Professor

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Asst Professor

Grad Faculty Riochemistry **Grad Faculty** Nuclear Engr Affiliate Grad Faculty **Grad Faculty** Landscape Architecture Affiliate Grad Faculty Mechanical & Aerospace Engr Affiliate Grad Faculty Dept Molecular Biomedical Sci Affiliate Grad Faculty Grad Faculty **Biological Sciences** Grad Faculty Materials Science & Engineering Affiliate Grad Faculty Fitts Dept Indust & Syst Engr Grad Faculty Chemical & Biomolecular Engr. **Grad Faculty** Genetics Grad Faculty Architecture Grad Faculty Entomology & Plant Pathology Grad Faculty Biomedical Program-Engineering Affiliate Grad Faculty Marine Earth & Atmospheric Sci **Grad Faculty** Biomedical Program-Engineering **Grad Faculty** Mechanical & Aerospace Engr Entomology & Plant Pathology **Grad Faculty** Grad Faculty Electrical & Computer Engr. **Grad Faculty** Forest Biomaterials Affiliate Grad Faculty Ag & Resource Economics **Grad Faculty** Dept Molecular Biomedical Sci **Grad Faculty** Textile & Apparel Tech & Mgmt **Grad Faculty** Textile Engr Chemistry & Sci **Grad Faculty** Physics **Grad Faculty** Biological And Agri Engr Grad Faculty Electrical & Computer Engr. Statistics **Grad Faculty** Crop & Soil Sciences Grad Faculty **Grad Faculty** Biological And Agri Engr Affiliate Grad Faculty Adult & Higher Education Grad Faculty **Grad Faculty** Affiliate Grad Faculty English Affiliate Grad Faculty Electrical & Computer Engr. Grad Faculty **Grad Faculty** Communication **Grad Faculty** Electrical & Computer Engr. **Grad Faculty** Entomology & Plant Pathology **Grad Faculty** Marine Earth & Atmospheric Sci Grad Faculty Plant and Microbial Biology Economics-Poole COM **Grad Faculty** Affiliate Grad Faculty Flectrical & Computer Engr Affiliate Grad Faculty For & Envir Res Acad Research Affiliate Grad Faculty FIPHD **Grad Faculty Dept of Clinical Sciences** Grad Faculty Horticultural Science **Grad Faculty** Mathematics Grad Faculty Materials Science & Engineering **Grad Faculty** Applied Ecology **Grad Faculty** Foreign Languages and Lit **Grad Faculty** For & Envir Res Acad Research **Grad Faculty** Crop & Soil Sciences **Grad Faculty Grad Faculty** Soil Science Textile & Apparel Tech & Mgmt **Grad Faculty** Grad Faculty Mathematics **Grad Faculty** Materials Science & Engineering Grad Faculty Nuclear Engi **Grad Faculty** Fitts Dept Indust & Syst Engr Affiliate Grad Faculty ELPHD **Grad Faculty** Horticultural Science Affiliate Grad Faculty **Grad Faculty** Fitts Dept Indust & Syst Engr Grad Faculty FIPHD Population Health&Pathobiology **Grad Faculty** Grad Faculty FIPHD **Grad Faculty** Forest Biomaterials **Grad Faculty** Foreign Languages and Lit **Grad Faculty** Agricultural & Human Sciences Agricultural & Human Sciences **Grad Faculty Grad Faculty** Chemistry Forest Biomaterials Grad Faculty Affiliate Grad Faculty For & Envir Res Acad Research **Grad Faculty** Communication Affiliate Grad Faculty Marine Earth & Atmospheric Sci **Grad Faculty** Civil, Const & Env Engineering **Grad Faculty** Textile Engr Chemistry & Sci Grad Faculty Agricultural & Extension Edu

Grad Faculty

Grad Faculty

TFIS

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lavkus Lee-Ann Named Professor Food Bioprocess & Nutrition Sc Grad Faculty Food Bioprocess & Nutrition Sc leffries.Micha Jennine Teaching Asst Professor TFLS Grad Faculty Flementary Education For & Envir Res Acad Research Grad Faculty Jeffries, Stephanie Breard Teaching Assoc Professor For & Envir Res Acad Research Jeng,Xinge Jessie Assoc Professor Statistics **Grad Faculty** Statistics Jenkins, David M **Emeritus Professor** Personal Org. Development **Grad Faculty** Agricultural & Extension Edu Jennings, Gregory Donald Emeritus Professo Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Jennings, Jamie Allison Teaching Asst Professor Computer Science-engr Affiliate Grad Faculty Computer Science-Engr Horticultural Science Jennings.Katherine Mary Assoc Professor Horticultural Science **Grad Faculty** Jennings.Pamela Lynnette Professor Art and Design **Grad Faculty** Art and Design Grad Faculty For & Envir Res Acad Research Jett.Jackson Bates Professor Tree Improvement Cooperative Jett Jackson Bates Emeritus Professor College of Natural Resources Grad Faculty For & Envir Res Acad Research Jetton PhD,Robert Miller Research Assoc Professor CAMCORE-Cooperative **Grad Faculty** For & Envir Res Acad Research Jhala.Arnay Harish Assoc Professo Computer Science-engi Grad Faculty Computer Science-Engl Ji,Chueng Ryong Professor Physics **Grad Faculty** Physics Jiang, Xiaoning Distinguished Professor Mechanical & Aerospace Engr Grad Faculty Mechanical & Aerospace Engr Jin.Bongil Assoc Professor Graphic & Industrial Design Grad Faculty Graphic & Industrial Design Jin, Byoungho Ellie Named Professor Textile & Apparel, Technology Grad Faculty Textile & Apparel Tech & Mgmt Jin, Guoliang Asst Professor Computer Science-engi Grad Faculty Computer Science-Engr Jing,Naihuan Professor Mathematics Grad Faculty Mathematics Jing,Yun Assoc Professor Mechanical & Aerospace Engr Grad Faculty Mechanical & Aerospace Engr Jodoin, Vincent Joseph Adjunct Assoc Professor **Nuclear Engineering** Affiliate Grad Faculty Nuclear Engr Affiliate Grad Faculty Joffe.Sharon Lynne Adjunct Assoc Professor English English Johanningsmeier.Suzanne D USDA Assoc Professor Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Johnson, Amy Marie Asst Professor Crop & Soil Sciences Grad Faculty Crop & Soil Sciences Johnson, David Neal Adjunct Asst Professor FIPHD Affiliate Grad Faculty FLPHD Johnson, Henry Louis Professor of the Practice FIPHD Affiliate Grad Faculty FLPHD Johnson, Jeremiah Assoc Professor Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Johnson, Melissa A Professor Communication **Grad Faculty** Communication Johnson, Richard R. **Emeritus Professor** Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Johnson.Thomas Emeritus Professor Ag & Resource Economics Grad Faculty Ag & Resource Economics Animal Science Johnson, William L **Emeritus Professor** Animal Science **Grad Faculty** Johnston, Andrew Robert Grad Faculty Asst Professor **English English** Johnston, David West **Emeritus Distinguished Prof** Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Johnston, Karen L Emeritus Professor Physics **Grad Faculty** Physics **Biological Sciences** Johnstone III, William M. 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Business Management-Poole COM Business Management-Poole COM Jones, Daniela Sofia Research Asst Professor Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Jones, Ebony Pearl Asst Professor Affiliate Grad Faculty History History Crop & Soil Sciences Crop & Soil Sciences Jones, Guy Langston **Emeritus Professor Grad Faculty** Jones, Jacob L Professor Materials Science & Engineering Grad Faculty Materials Science & Engineering Emeritus Professor Animal Science Animal Science Jones, James R. **Grad Faculty** Jones.Jill Spargur Teaching Asst Professor Grad Faculty TFLS TFIS Curr. Instr & Counselor Ed-CED Curr. Instr & Counselor Ed-CED Jones, Lawrence Keith **Emeritus Professor Grad Faculty** Jones.Melissa Gai Professor Sci, Tech, Engr & Math (STEM) **Grad Faculty** Sci, Tech, Engr & Math (STEM) Jones, Ronald K **Emeritus Professor** Entomology & Plant Pathology **Grad Faculty** Entomology & Plant Pathology Jones.Samuel L Professo Dept of Clinical Sciences **Grad Faculty** Dept of Clinical Sciences Jones, Tamecia Raishaun Asst Professor Sci, Tech, Engr & Math (STEM) **Grad Faculty** Sci, Tech, Engr & Math (STEM) Emeritus Professor Jones.Victor A. Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Affiliate Grad Faculty Biological Sciences Jones.Whitney Mcrae Teaching Asst Professor Biological Sciences Plant and Microbial Biology Jordan, Chad Victor Teaching Assoc Professor Plant and Microbial Biology **Grad Faculty** Jordan, David L Professor Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Jordan, William J. **Emeritus Professor** Communication **Grad Faculty** Communication Joseph, Michael Vadakekara Asst Professor Prestage Poultry Science **Grad Faculty** Prestage Poultry Science Joyner, Charles Edward Emeritus Professor Art and Design **Grad Faculty** Art and Design Textile Engineering, Chemistry Textile Engr Chemistry & Sci Jur, Jesse Stephen Assoc Professor **Grad Faculty** Kaber David B Adjunct Professor Fitts Dept Indust & Syst Engr Grad Faculty Fitts Dept Indust & Syst Engr Kabukcuoglu Dur, Ayse Zeyneti Asst Professor Economics-Poole COM **Grad Faculty** Economics-Poole COM Kaeser, Tobias Ernst Asst Professor Dept-Population, Health, Pathobi Grad Faculty Population Health&Pathobiology Kahn, Joseph Stephan **Emeritus Professor** Biochemistry **Grad Faculty** Biochemistry Kalat, James W. Emeritus Professor Psychology **Grad Faculty** Psychology Kalinga,Owen J **Emeritus Professor** History **Grad Faculty** History Asst Professor Economics-Poole COM Economics-Poole COM Kalnina.llze **Grad Faculty** Kaltofen.Erich L Professor Mathematics **Grad Faculty** Mathematics Biomedical Program - ENG Grad Faculty Biomedical Program-Engineering Kamper, Derek Gary Assoc Professor Kamykowski, Daniel **Emeritus Professor** Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci Kandilov,Ivan Todorov Assoc Professor Ag & Resource Economics **Grad Faculty** Ag & Resource Economics Kang,Min Jeong Assoc Professor **Grad Faculty** Mathematics Mathematics Marine Earth & Atmospheric Sci Kang, Nam-Young Adjunct Asst Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Kanters, Michael A Professor Parks, Recreation & Tourism Mg **Grad Faculty** Parks Recreation & Tourism Mg Assoc Professor Kaoumi.Diamel Nuclear Engineering **Grad Faculty** Nuclear Engr Computer Science-Engr Kapravelos.Alexandros Asst Professor Computer Science-engi **Grad Faculty** Adjunct Assoc Professor Karoui Abdennaceur Materials Science & Engineering Materials Science & Engineering Affiliate Grad Faculty Kasal, Bohumil Adjunct Professor **Forest Biomaterials Grad Faculty** Forest Biomaterials Kasichainula, Jagannadham Assoc Professor Materials Science & Engineering **Grad Faculty** Materials Science & Engineering Kasper-Marienberg, Verena Ines Asst Professor **Grad Faculty** History Kasworm, Carol Edith **Emeritus Named Professor Grad Faculty** Kathariou, Sophia Food, Bioprocess & Nutrition Sc **Grad Faculty** Professor Food, Bioprocess & Nutrition Sc

Entomology & Plant Pathology

Grad Faculty

Katsumata.Avako

Katti Madhusudan Vithal Assoc Professor For & Envir Res Acad Research Grad Faculty For & Envir Res Acad Research Emeritus Associate Professor English Grad Faculty Katz Susan M **English** Katzin Gerald H Emeritus Professor Physics Grad Faculty Physics Kaur.Parminder Research Asst Professor Physics **Grad Faculty** Physics Kay PhD,Colin David Assoc Professor Kannapolis Research **Grad Faculty** Food, Bioprocess & Nutrition Sc Kav.Michael G Assoc Professo Fitts Dept Indust & Syst Engr **Grad Faculty** Fitts Dept Indust & Syst Engr Kays, Roland Wesley Research Assoc Professor For & Envir Res Acad Research **Grad Faculty** For & Envir Res Acad Research Kazemi Tutunchi, Golbarg Affiliate Grad Faculty Fitts Dept Indust & Syst Engr Kazemi Tutunchi.Golbarg Adjunct Professor Fitts Dept Indust & Syst Engr Affiliate Grad Faculty Fitts Dept Indust & Syst Engr Grad Faculty Kearney, Richard Craig Public & International Affairs Kearns Joshua Perry Asst Professor Civil Const & Environ Engineer Grad Faculty Civil, Const & Env Engineering Kedrowicz, April Ann Assoc Professor Dept of Clinical Sciences **Grad Faculty Dept of Clinical Sciences** Dept-Population, Health, Pathobi Keelara Veerappa Shiyaramu Research Asst Professor Grad Faculty Population Health&Pathobiology Keene,Bruce W Professor **Dept of Clinical Sciences Grad Faculty Dept of Clinical Sciences** Keene, Karen Allen Assoc Professor Sci, Tech, Engr & Math (STEM) Grad Faculty Sci, Tech, Engr & Math (STEM) Kellev.Blair Lynne Murphy Assoc Professor Grad Faculty Interdisciplinary Studies History Kelley, Carl Timothy Named Professor Mathematics Grad Faculty Mathematics Kelley, John H Research Assoc Professor Physics Grad Faculty Physics Kelley,Stephen S Professor Forest Biomaterials Grad Faculty Forest Biomaterials Kellison, Robert C. Emeritus Professor For & Envir Res Acad Research **Grad Faculty** For & Envir Res Acad Research Kellner PhD, Hans Dodds Professor English **Grad Faculty** English Teaching Asst Professor Kellogg, Shaun B. Friday Institute Affiliate Grad Faculty TELS Foreign Languages And Literatu Kelly.John Rivard Emeritus Professor **Grad Faculty** Foreign Languages and Lit Kelly,Robert M Named Professor Chemical & Biomolecular Engr Grad Faculty Chemical & Biomolecular Engr. Keltie.Richard F. Professor Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Kemahlioglu-Ziya,Eda Assoc Professor **Business Management-Poole COM Grad Faculty** Business Management-Poole COM Kemper, Alexander Asst Professor **Grad Faculty** Physics Physics Adjunct Asst Professor Affiliate Grad Faculty Applied Ecology Kendall.Corinne J Applied Ecology Kennedy, George G. Named Distinguished Professor Entomology & Plant Pathology **Grad Faculty** Entomology & Plant Pathology Kennedy-Stoskopf,Suzanne Emeritus Research Professor Dept of Clinical Sciences Grad Faculty Dept of Clinical Sciences Affiliate Grad Faculty Kentgens-Craig PhD.Margret Adjunct Assoc Professor Architecture Architecture Asst Professor For & Fnyir Res Acad Research For & Envir Res Acad Research Kern.Jordan Grad Faculty Kerns, James P Assoc Professor Entomology & Plant Pathology **Grad Faculty** Entomology & Plant Pathology Kertesz, Judy Asst Professor History **Grad Faculty** History Emeritus Professor Kessel, John J English **Grad Faculty** English Kessler,Sanford H. **Emeritus Associate Professor** Public & International Affairs **Grad Faculty** Public & International Affairs Chemical & Biomolecular Engr Grad Faculty Chemical & Biomolecular Engr. Keung, Albert Jun Qi Asst Professor Emeritus Associate Professor Keys.Robert Dean Crop & Soil Sciences Crop & Soil Sciences Grad Faculty Keyser,Tara Adjunct Assoc Professor For & Envir Res Acad Research Affiliate Grad Faculty For & Envir Res Acad Research Keyton, Joann Professor Communication Grad Faculty Communication Khachatoorian, Haig **Emeritus Professor** Graphic & Industrial Design **Grad Faculty** Graphic & Industrial Design Khaledi, Morteza Emeritus Professor Chemistry Affiliate Grad Faculty Chemistry Chemical & Biomolecular Engr Chemical & Biomolecular Engr. Khan, Saad A Named Professor **Grad Faculty** Khater, Akram F Professor KCLDS Grad Faculty History Mathematics Khevfets.Arkady Professor Mathematics **Grad Faculty** Public & International Affairs Public & International Affairs Asst Professor Grad Faculty Khisa Moses Khorram.Siamak For & Envir Res Acad Research **Grad Faculty** Khosla.Narendra P. **Emeritus Professor** Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Kia,Behnam Adjunct Asst Professor Electrical & Computer Engr. Affiliate Grad Faculty Electrical & Computer Engr. Kick.Edward Lee Professo Ag & Resource Economics **Grad Faculty** Ag & Resource Economics Kilara, Arun Adjunct Professor Food, Bioprocess & Nutrition Sc Affiliate Grad Faculty Food, Bioprocess & Nutrition Sc Adjunct Asst Professor For & Envir Res Acad Research Affiliate Grad Faculty For & Envir Res Acad Research Kilgo.John C Kim.Eui Kvung Asst Professor Psychology **Grad Faculty** Psychology Electrl & Comp Engr Grad & Temp Affiliate Grad Faculty Kim.Jihwan Kim,Ki Wook Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Kim, Mi Gyung Professor **Grad Faculty** History History Kim, Sung Woo Animal Science **Grad Faculty** Animal Science Kim,Yongbaek Adjunct Asst Professor Dept-Population, Health, Pathobi Affiliate Grad Faculty Population Health&Pathobiology Distinguished University Prof Kim, Youngsoo R Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Kimbell Julia S Adjunct Professor Affiliate Grad Faculty Statistics Statistics Kimler, William Charles Assoc Professor History **Grad Faculty** History Computer Science-engr King, Jason Tyler Teaching Asst Professor Affiliate Grad Faculty Computer Science-Engr King, John S Professor FER Tree Physiology **Grad Faculty** For & Envir Res Acad Research King, Margaret Fontaine Emeritus Associate Professor **Grad Faculty** English English King, Martin William Professor Textile Engineering, Chemistry **Grad Faculty** Textile Engr Chemistry & Sci King, Russell E. Named Professor Grad Faculty Fitts Dept Indust & Syst Engr Fitts Dept Indust & Syst Engr King.Stacv W Distinguished Professor Business Management-Poole COM **Grad Faculty** Business Management-Poole COM Kingsmill.David E Adjunct Professor Marine Farth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Kinra.Kavita Assoc Professor Textile & Apparel, Technology **Grad Faculty** Textile & Apparel Tech & Mgmt Kinsella.William J Professor Communication **Grad Faculty** Communication Kirby,Barbara Malpiedi Professor Agricultural & Human Sciences **Grad Faculty** Agricultural & Human Sciences 4-H Youth Dev & Fam & Cons Sci Kirby,Sarah D Professo Agricultural & Human Sciences **Grad Faculty** Kirkman, Adrianna G. Emeritus Professor College of Natural Resources **Grad Faculty** Forest Biomaterials Mgmt, Innovation&Entrepreneur Mgmt, Innovation & Entrepreneu Kirkman, Bradley Lane Professor **Grad Faculty** Adjunct Asst Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Kirkpatrick, Gary Jay Grad Faculty Flectrical & Computer Engr Kish Ir Frederick Anthony Professor Electrical & Computer Engr. Kiwanuka-Tondo, James Assoc Professor Communication **Grad Faculty** Communication Klaenhammer,Todd Robert Emrtus Nmd Distng'd Univ Prof Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Kleiman, Glenn Marshall Professor **Grad Faculty** TELS Klein.Katherine W. **Emeritus Associate Professor** Psychology **Grad Faculty** Psychology Asst Professor Plant and Microbial Biology **Grad Faculty** Plant and Microbial Biology Kleiner, Manuel

Mechanical & Aerospace Engr

Grad Faculty

Mechanical & Aerospace Engr

Kleinstreuer.Clement

Professor

Kleiss Harold I Emeritus Professor Cron & Soil Sciences Grad Faculty Kloos, Weslev Edwin Grad Faculty Emeritus Professor Biological Sciences Grad Faculty Knappe.Detlef R Distinguished Professor Civil Const & Environ Engineer Knauer, Mark T Assoc Professor Animal Science **Grad Faculty** Kneller, James P Assoc Professor Physics **Grad Faculty** Knoeber, Charles Robert Professo Economics-Poole COM **Grad Faculty** Knollenberg, Whitney Grace Asst Professor Parks, Recreation & Tourism Mg **Grad Faculty** Emeritus Professor Biochemistry Knopp, James Arthur **Grad Faculty** Knowles Jr.A Sidney Emeritus Professor English **Grad Faculty** Knowles.Anna Marie Gibson Teaching Asst Professor English **Grad Faculty** Knowles, Charles Ernest Lecture Mar. Earth & Atmos Sci Grad-Tm Grad Faculty Knowles, Charles Ernest Marine, Earth And Atmospheric **Grad Faculty** Lecture Knowles James Robert Teaching Assoc Professor English Grad Faculty Koch Jr,Frank H Adjunct Assoc Professor For & Envir Res Acad Research Affiliate Grad Faculty Koch, Carl C Named Distinguished Professor Materials Science & Engineering Grad Faculty Koch Joanna Greer Teaching Asst Professor TELS Grad Faculty Marine. Earth And Atmospheric Koch.Steven E Adjunct Professor Affiliate Grad Faculty Kochersberger, Robert C. Emeritus Associate Professor English Grad Faculty Kochtcheeva, Lada Vyacheslavovna Assoc Professor Public & International Affairs Grad Faculty Koci, Matthew D Professo Prestage Poultry Science Grad Faculty Emeritus Professor Forest Biomaterials Kocurek, Michael J **Grad Faculty** Emeritus Research Assoc Prof Entomology & Plant Pathology Koenning PhD.Stephen Robert **Grad Faculty** Kogan, Irina Aleksandrovna Assoc Professor Mathematics **Grad Faculty** Kolar Praveen Assoc Professor Biological And Agricultural En **Grad Faculty** Kolb.John Ronald **Emeritus Professor** Sci. Tech. Engr & Math (STEM) **Grad Faculty** Electrical & Computer Engr. Kolbas,Robert Michael Professor **Grad Faculty** Komarnytsky, Slavko Assoc Professor Kannapolis Research **Grad Faculty** Kon.Thomas Matthew Asst Professor Horticultural Science **Grad Faculty** Konrad II, Charles Edward Adjunct Assoc Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Konsler, Thomas R. Emeritus Professor Horticultural Science Grad Faculty Dept-Population.Health.Pathobi Kordick.Stephanie Adjunct Asst Professor Affiliate Grad Faculty Kornegay, Julia L Professor Horticultural Science **Grad Faculty** Nuclear Reactor Program Korobkina, Ekaterina **Grad Faculty** Communication Kosenko,Kama A Assoc Professor **Grad Faculty** Mar, Earth & Atmos Sci Grad-Tm Affiliate Grad Faculty Kosovic PhD, Branko Adjunct Assoc Professor Koster,Emlyn H Adjunct Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Kotek, Richard Assoc Professor Textile Engineering, Chemistry **Grad Faculty** Kotter-Gruehn.Dana Psychology Affiliate Grad Faculty Kouri.Richard Ellis Adjunct Professor Biomedical Program - ENG Affiliate Grad Faculty Koutsos, Elizabeth A Adjunct Professor Animal Science Affiliate Grad Faculty Kowalsky, Mervyn J Professor Civil Const & Environ Engineer **Grad Faculty** Kowolenko, Michael David Lab for Analytic Sciences Affiliate Grad Faculty Krakowsky, Matthew David USDA Assoc Professor Crop & Soil Sciences **Grad Faculty** Kramer, Jonathan Charles Teaching Professor Music Affiliate Grad Faculty Adjunct Assoc Professor Krasnvanski.Sergei Fedorovich Horticultural Science Affiliate Grad Faculty Kraus.Helen Tyler Assoc Professor Horticultural Science **Grad Faculty** Adjunct Assoc Professor Kraus, Philip Allan **Nuclear Engineering** Affiliate Grad Faculty Krause, Wendy E. Assoc Professor Textile Engineering, Chemistry **Grad Faculty** Krawczyk, Katherine Ann Professor Accounting-Poole COM **Grad Faculty** Electrical & Computer Engr. Krim.Hamid Professo **Grad Faculty** Krim, Jacqueline Professor Physics **Grad Faculty** Assoc Professor Plant and Microbial Biology Krings.Alexande **Grad Faculty** Krishnamurthy.Srinivasan Assoc Professor Business Management-Poole COM **Grad Faculty Grad Faculty** Kropaczek, David Adjunct Professor Nuclear Engineering Krotee, March Lee **Emeritus Professor** Health and Exercise Studies **Grad Faculty** Krupa,Erin Asst Professor Sci, Tech, Engr & Math (STEM) **Grad Faculty** Krute,Linda D Adjunct Asst Professor College Of Engineering-dean's **Grad Faculty** Kudenov, Michael W Assoc Professor Electrical & Computer Engr. **Grad Faculty** Kulesza, Stephanie Brooke Asst Professor **Grad Faculty** Crop & Soil Sciences Dept-Population, Health, Pathobi Asst Professor Kulkarni.Raveendra Rangarao Grad Faculty Kullman.Seth William Professor **Biological Sciences Grad Faculty** Kumah, Divine Philip Asst Professor Physics Grad Faculty Kunkel, Kenneth E Research Professor Marine, Earth And Atmospheric **Grad Faculty** Kuraparthy, Vasu **Grad Faculty** Assoc Professo Crop & Soil Sciences Kuzma,Jennifer Named Professor Public & International Affairs **Grad Faculty** Kuznetsov, Andrey Valerevich Grad Faculty Professor Mechanical & Aerospace Engr Kwak.Thomas J USDI Professor Applied Ecology **Grad Faculty** Research Asst Professor Thermal Protection & Comfort C Kwon.Cassandra Hvun Affiliate Grad Faculty LaBarr, Aric David Assoc Professor Advanced Analytics Affiliate Grad Faculty Grad Faculty LaBean,Thomas H Professor Materials Science & Engineering Professor **Grad Faculty** Laber, Eric Benjamin Statistics Agricultural & Human Sciences Lackey, Carolyn Jean Emeritus Professor **Grad Faculty** Lackmann, Gary M. Professor Marine, Earth And Atmospheric **Grad Faculty** Lada.Thomas J. Lecturer Mathematics **Grad Faculty** Emeritus Professor Lada.Thomas J. Mathematics **Grad Faculty** Lado Ir Fred Physics Emeritus Professor Grad Faculty Laffitte,Bryan W Assoc Professor Graphic & Industrial Design **Grad Faculty** Lahiri,Soumendra Nath Adjunct Professor Statistics **Grad Faculty** Laing,Arlene G Adjunct Assoc Professor Marine, Earth And Atmospheric

Asst Professor

Professor

Assoc Professor

Forest Biomaterials

Biomedical Program - ENG

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Grad Faculty

Grad Faculty

Grad Faculty

Forest Biomaterials

Biomedical Program-Engineering

Textile & Apparel Tech & Mgmt

Laleicke,Paul Frederik

Lamar.Traci Ann May

Lalush,David S

Genetics Civil, Const & Env Engineering Animal Science Physics Economics-Poole COM Parks Recreation & Tourism Mg Biochemistry English English Marine Earth & Atmospheric Sci Marine Earth & Atmospheric Sci English For & Envir Res Acad Research Materials Science & Engineering TELS Marine Earth & Atmospheric Sci English Public & International Affairs Prestage Poultry Science Forest Biomaterials Entomology & Plant Pathology Mathematics Biological And Agri Engr Sci, Tech, Engr & Math (STEM) Electrical & Computer Engr. Food, Bioprocess & Nutrition Sc Horticultural Science Marine Earth & Atmospheric Sci Horticultural Science Population Health&Pathobiology Horticultural Science Communication Marine Earth & Atmospheric Sci Marine Earth & Atmospheric Sci Textile Engr Chemistry & Sci Biomedical Program-Engineering Animal Science Civil, Const & Env Engineering Crop & Soil Sciences Interdisciplinary Studies Horticultural Science Horticultural Science Nuclear Engr Textile Engr Chemistry & Sci Accounting-Poole COM Electrical & Computer Engr. Physics Plant and Microbial Biology Business Management-Poole COM Nuclear Engr Sci, Tech, Engr & Math (STEM) State Climate Office - AGNET Electrical & Computer Engr. Crop & Soil Sciences Population Health&Pathobiology **Biological Sciences Physics** Marine Earth & Atmospheric Sci Crop & Soil Sciences Public & International Affairs Mechanical & Aerospace Engr Applied Ecology Textile Engr Chemistry & Sci Economics-Poole COM Materials Science & Engineering Statistics Agricultural & Human Sciences Marine Earth & Atmospheric Sci Mathematics Mathematics Physics Graphic & Industrial Design Statistics Affiliate Grad Faculty Marine Earth & Atmospheric Sci

Soil Science

Lamb Harold Henry Lancia.Richard Angelo Lane.Jeffrey William Laney,Reid W Lang PhD, Albert Joseph Langerhans, Randall Brian Langfelder, Leonard J. Langlev.Ricky Lee Lanier.Tyre C. Lanou, Randall S Lanzas.Cristina Laplante PhD,Caroline Lapp John S Lari,Pooneh Lari.Pooneh Larick.Duane K. Larson, Lincoln Rav Larson, Sarah Michelle Lascelles, Duncan X. Lassiter, Charles A. Laster,Scott M. Lau.Christopher S Laux.Dorianne Louise Lavelle, Jerome Philip Lavery.John Lavoine, Nathalie Marie Lavopa, Anthony J Law,Jerry M Layman, Craig Anthony Lazzi, Gianluca LeBeau, James Michael LeBlanc, Gerald Andre LePrevost, Catherine Elizabeth Leach, James Woodrow Lebude, Anthony V Leduc,Sharon K Lee PhD, Kangjae Lee.Bongmook Lee, Dean Junyuel Lee, Dean Junyuel Lee, Hollylynne Stohl Lee,John Kelly Lee, Joshua Alexander Lee, Nicole Marie Lee.Susanna M Lee Yuan-Shin Leggett.Zakiva Holmes Leidy.Ross Bennett Leiter, Jeffrey Carl Leithold.Elana L Lemaster, Richard L Leming, Michael Lloyd Leon Gonzalez.Ramon Gonzalo Leonard.Rebecca Leonas, Karen Lester II, James C Leung, Kent Kwan Ho Leung, Yu-Fai Levenbook, Barbara B. Levere.Thomas E. Levin.Harold D. Levine DVM, Jay Frederick Levine PhD, Norman Seth Levings III, Charles S Levis, James William Levy PhD.Michael Green Lewald.Carol Ann Lewbart.Gregory A Lewellen, Christina Maria Lewis,Ramsey S Lewis, William M. Lewitus, Alan J Ley,David H. Li.Bailian Li.Fanxing Li lun Li,Lingjuan Wang Li,Xu Li,Zheng Li.Zhilin

Liao,Chia yueh Liao.Wenije

Professor Emeritus Professor Adjunct Assoc Professor Adjunct Asst Professor Adjunct Asst Professor Assoc Professo Emeritus Professor Adjunct Asst Professor Emeritus Professor

Assoc Professor

Asst Professor

Emeritus Professor Adjunct Asst Professor Teaching Asst Professor Professor Asst Professor Asst Professor Professor Emeritus Professor Professor Adjunct Professor Professor Assoc Professor Adjunct Professor Asst Professor **Emeritus Professor**

Professor

Adjunct Professor

Adjunct Assoc Professor Professor Teaching Assoc Professor Professor Assoc Professor Adjunct Professor Asst Professor Research Asst Professor

Adjunct Professor Professor Professor **Emeritus Professor** Asst Professor Assoc Professor Professor Asst Professor **Emeritus Professor**

Professo

Emeritus Professor Asst Professor Emeritus Associate Professor Professor Distinguished Professor Research Asst Professor Professor Professor Emeritus Professor Emeritus Associate Professor Professor Adjunct Professor Emeritus Named Distng'd Prof Research Asst Professor Emeritus Professor Teaching Asst Professor Professor Asst Professor Professor Emeritus Professor Adjunct Asst Professor **Emeritus Professor** Professor Assoc Professor Adjunct Asst Professor Professor Assoc Professor Asst Professor Professor

Asst Professor

Adjunct Asst Professor

Chemical & Biomolecular Engr For & Fnyir Res Acad Research Nuclear Engineering Applied Ecology For & Envir Res Acad Research **Biological Sciences** Marine, Earth And Atmospheric **Biological Sciences** Food.Bioprocess & Nutrition Sc Architecture Dept-Population, Health, Pathobi Dept Molecular Biomedical Scie Economics-Poole COM ELPHD Exec Vice Chancellor & Provost Parks, Recreation & Tourism Mg Marine, Earth And Atmospheric Dept of Clinical Sciences Animal Science **Biological Sciences** Dept Molecular Biomedical Scie English College Of Engineering-dean's Mathematics Forest Biomaterials History Dept-Population, Health, Pathobi Applied Ecology Electrical & Computer Engr. Materials Science & Engineering Biological Sciences Applied Ecology Mechanical & Aerospace Engr Horticultural Science Marine, Earth And Atmospheric Parks, Recreation & Tourism Mg Adv Self-pwr Sys Integr SensrT

Physics Physics Sci, Tech, Engr & Math (STEM) TELS Crop & Soil Sciences Communication History Fitts Dept Indust & Syst Engr For & Envir Res Acad Research Biological Sciences

Sociology & Anthropology Marine, Earth And Atmospheric Forest Biomaterials Civil Const & Environ Engineer Crop & Soil Sciences Communication Textile & Apparel, Technology Computer Science-engr Parks, Recreation & Tourism Mg Philosophy & Religious Studies Psychology Philosophy & Religious Studies Marine, Earth And Atmospheric Marine, Earth And Atmospheric **Biological Sciences** Civil Const & Environ Engineer Dept-Population.Health.Pathobi

Interdisciplinary Studies Dept of Clinical Sciences Accounting-Poole COM Crop & Soil Sciences Crop & Soil Sciences Marine, Earth And Atmospheric Dept-Population, Health, Pathobi Office of Global Engagement Chemical & Biomolecular Engr Nuclear Engineering Biological And Agricultural En Plant and Microbial Biology Ag & Resource Economics

Public & International Affairs

Sociology & Anthropology

Mathematics

Grad Faculty Chemical & Biomolecular Engr Grad Faculty For & Fnyir Res Acad Research Affiliate Grad Faculty Nuclear Engr Affiliate Grad Faculty Applied Ecology Affiliate Grad Faculty For & Envir Res Acad Research **Grad Faculty Biological Sciences Grad Faculty** Marine Earth & Atmospheric Sci Affiliate Grad Faculty Biological Sciences Food.Bioprocess & Nutrition Sc **Grad Faculty** Affiliate Grad Faculty Grad Faculty Population Health&Pathobiology **Grad Faculty** Dept Molecular Biomedical Sci Grad Faculty Economics-Poole COM Affiliate Grad Faculty Affiliate Grad Faculty ELPHD Grad Faculty Food Bioprocess & Nutrition Sc. Grad Faculty Parks Recreation & Tourism Mg Grad Faculty Marine Earth & Atmospheric Sci Grad Faculty Dept of Clinical Sciences

Grad Faculty Animal Science **Grad Faculty Biological Sciences** Dept Molecular Biomedical Sci Affiliate Grad Faculty **Grad Faculty** English Textile Engr Chemistry & Sci Grad Faculty Affiliate Grad Faculty Mathematics **Grad Faculty** Forest Biomaterials **Grad Faculty** History Population Health&Pathobiology **Grad Faculty**

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Electrical & Computer Engr. Materials Science & Engineering **Biological Sciences** Applied Ecology Mechanical & Aerospace Engr Horticultural Science Affiliate Grad Faculty Marine Earth & Atmospheric Sci Parks Recreation & Tourism Mg Electrical & Computer Engr.

Physics Sci, Tech, Engr & Math (STEM) TELS Crop & Soil Sciences Communication History Fitts Dept Indust & Syst Engr For & Envir Res Acad Research Toxicology

Marine Earth & Atmospheric Sci

Civil, Const & Env Engineering **Grad Faculty Grad Faculty** Crop & Soil Sciences Grad Faculty Communication **Grad Faculty** Textile & Apparel Tech & Mgmt **Grad Faculty** Computer Science-Engr **Grad Faculty** Physics **Grad Faculty** Parks Recreation & Tourism Mg Philosophy & Religious Studies **Grad Faculty**

Psychology Grad Faculty Philosophy & Religious Studies **Grad Faculty** Population Health&Pathobiology Grad Faculty Affiliate Grad Faculty Marine Earth & Atmospheric Sci **Grad Faculty** Genetics **Grad Faculty**

Civil, Const & Env Engineering Grad Faculty Population Health&Pathobiology Affiliate Grad Faculty Sociology & Anthropology Grad Faculty Dept of Clinical Sciences **Grad Faculty** Accounting-Poole COM Grad Faculty Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Affiliate Grad Faculty Marine Earth & Atmospheric Sci **Grad Faculty**

Population Health&Pathobiology For & Envir Res Acad Research Chemical & Biomolecular Engr. Nuclear Engr Affiliate Grad Faculty

Grad Faculty Biological And Agri Engr **Grad Faculty** Plant and Microbial Biology **Grad Faculty** Ag & Resource Economics **Grad Faculty** Mathematics Affiliate Grad Faculty Public & International Affairs

Grad Faculty Sociology & Anthropology Lidman Tve Asst Professor Mathematics Grad Faculty Mathematics Crop & Soil Sciences Liehl Rex Crop & Soil Sciences Adjunct Professor Affiliate Grad Faculty Ligler Frances Smith Named Distinguished Professor Biomedical Program - ENG Grad Faculty Biomedical Program-Engineering Ligler,George Todd Professor of the Practice Biomedical Program - ENG **Grad Faculty** Biomedical Program-Engineering Ligon, James M Adjunct Assoc Professor Plant and Microbial Biology Affiliate Grad Faculty Microbiology Lila.Mary Ann Distinguished Professor Kannapolis Research **Grad Faculty** Food, Bioprocess & Nutrition Sc Lilley, Stephen C. Emeritus Associate Professor Sociology & Anthropology **Grad Faculty** Sociology And Anthropology Lilly, John P. Emeritus Associate Professor Crop & Soil Sciences **Grad Faculty** Soil Science Lim.Phooi K. Professor Chemical & Biomolecular Engr **Grad Faculty** Chemical & Biomolecular Engr. Lim.Shuang Fang Assoc Professor Physics Grad Faculty Physics Lin,Jing Adjunct Assoc Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Lin,Shih-Chun Asst Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Lin.Weili Biomedical Program - ENG Grad Faculty Biomedical Program-Engineering Lin,Xiao-Biao Professor Mathematics **Grad Faculty** Mathematics Lindbo, David L Crop & Soil Sciences Grad Faculty Linder.Keith E Clinical Professor Dept-Population,Health,Pathobi Grad Faculty Population Health&Pathobiology Lindsay, Edwin Keith Teaching Assoc Professor Parks Recreation & Tourism Mg Parks, Recreation & Tourism Mg Affiliate Grad Faculty Lindsay, Vincent Asst Professor Chemistry Grad Faculty Chemistry Chemistry Chemistry Lindsey, Jonathan S Named Distinguished Univ Prof Grad Faculty Linker, Harry M Emeritus Professor Crop & Soil Sciences Grad Faculty Crop & Soil Sciences Dept of Clinical Sciences Linnehan, Richard Visiting Asst Professor **Dept of Clinical Sciences** Affiliate Grad Faculty Civil, Const & Env Engineering List.George F Professor Civil Const & Environ Engineer **Grad Faculty** Little.Trevor J. 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Liu, Hsiao-Ching Professor Animal Science **Grad Faculty** Animal Science Liu, Huiqing Adjunct Asst Professor Mar, Earth & Atmos Sci Grad-Tm Affiliate Grad Faculty Marine Earth & Atmospheric Sci Liu,Jing-pu Assoc Professor Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci Liu,Jun Asst Professor Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Liu,Min Named Distinguished Associate Civil Const & Environ Engineer Grad Faculty Civil, Const & Env Engineering Liu.Ricky Ini Asst Professor Mathematics **Grad Faculty** Mathematics Graphic & Industrial Design Graphic & Industrial Design Liu Tsailu Professor Grad Faculty Liu, Wusheng Asst Professor Horticultural Science **Grad Faculty** Horticultural Science Liu,Xiaojing Asst Professor Biochemistry **Grad Faculty** Biochemistry Fitts Dept Indust & Syst Engr Liu,Yunan Assoc Professor Operations Research-engr **Grad Faculty** Livingston III, David P USDA Professor Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Livingston, Kimberly Ann Asst Professor Prestage Poultry Science Prestage Poultry Science **Grad Faculty** Lloyd.Alun L. Professor Mathematics Grad Faculty Mathematics Lloyd,Chervl L. Adjunct Asst Professor Administration - Extension Ser Affiliate Grad Faculty 4-H Youth Dev & Fam & Cons Sci Lobaton PhD, Edgar Assoc Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Crop & Soil Sciences Locke, Anna Michelle USDA Asst Professor Crop & Soil Sciences **Grad Faculty** Locklear,Eddie Lee Emeritus Associate Professor Agricultural & Human Sciences **Grad Faculty** Agricultural & Human Sciences Lohr, Kathy Diane Adjunct Asst Professor Affiliate Grad Faculty ELPHD Lomax,Terri Lynn Plant and Microbial Biology Grad Faculty Named Distinguished Professor Entomology & Plant Pathology Lommel.Steven Administration - Research Serv **Grad Faculty** Crop & Soil Sciences Cron & Soil Sciences Grad Faculty Long.Raymond Carl Emeritus Professor Plant and Microbial Biology **Grad Faculty** Long, Terri A. Assoc Professor Plant and Microbial Biology Longland, Richard Leigh Asst Professor Physics **Grad Faculty** Physics Longo, Stefano B Sociology & Anthropology **Grad Faculty** Sociology & Anthropology Assoc Professor Dept of Clinical Sciences Loomis.Michael R Adjunct Asst Professor Dept of Clinical Sciences Affiliate Grad Faculty Lopez-Uribe, Margarita Maria Adjunct Asst Professor Entomology & Plant Pathology Affiliate Grad Faculty Entomology & Plant Pathology Entomology & Plant Pathology Lorenzen.Marce D. Assoc Professor Entomology & Plant Pathology **Grad Faculty** Losordo.Thomas M. Professor Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Entomology & Plant Pathology Louws.Frank John Professor Horticultural Science Grad Faculty Lovell, Precious Denita Assoc Profess of the Practice Art and Design **Grad Faculty** Art and Design Lowman, Margaret D Research Professor College of Sciences - Dean Affiliate Grad Faculty College of Sciences-Dean's Off Lowrey, Austin S **Emeritus Professo** Graphic & Industrial Design **Grad Faculty** Graphic & Industrial Design Lstiburek,Milan Adjunct Assoc Professor For & Envir Res Acad Research Affiliate Grad Faculty For & Envir Res Acad Research Lu, Ning Assoc Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Lu.Wenbin Professor Statistics Grad Faculty Statistics Research Assoc Professor Affiliate Grad Faculty Lu, Wenchang **Physics Physics Biological Sciences** Lubischer, Jane L. Teaching Assoc Professor **Grad Faculty Biological Sciences** Lubkeman, David Lee Research Professor FREEDM Center **Grad Faculty** Electrical & Computer Engr. Lubkin,Sharon R Mathematics **Grad Faculty** Professo Mathematics Lucas PhD,Debra Jan Willis Lecturer Affiliate Grad Faculty Lucas, Elizabeth Asst Professor Dept Molecular Biomedical Scie Dept Molecular Biomedical Sci **Grad Faculty** Lucas.Leon T Emeritus Professor Entomology & Plant Pathology **Grad Faculty** Entomology & Plant Pathology Grad Faculty Lucia.Lucian A Assoc Professor Forest Biomaterials Forest Biomaterials Lucier, Gregory W Research Asst Professor Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Luckadoo,Timothy R University Housing Affiliate Grad Faculty **Emeritus Distinguished Prof Grad Faculty** Lucovsky, Gerald Physics Marine, Earth And Atmospheric Marine Earth & Atmospheric Sci Luczkovich PhD.Joseph John Adjunct Assoc Professor Affiliate Grad Faculty Luff,Jennifer Ann Asst Professor Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Luginbuhl,Geraldine Emeritus Professor Plant and Microbial Biology Grad Faculty Microbiology Luginbuhl.James E. **Emeritus Professor** Psychology **Grad Faculty** Psychology Cron & Soil Sciences Crop & Soil Sciences Luginbuhl.Jean-Marie Emeritus Professor Grad Faculty Lukic, Srdjan Miodrag Assoc Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Lunardi,Leda Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Lunn, David Paul Professor College Of Veterinary Medicine **Grad Faculty Dept of Clinical Sciences** Lunn, Katharine Fiona Assoc Professor **Dept of Clinical Sciences Grad Faculty Dept of Clinical Sciences** Luo,Hong Professor **Grad Faculty** Mechanical & Aerospace Engr Mechanical & Aerospace Engr

For & Envir Res Acad Research

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Marine Earth & Atmospheric Sci

For & Envir Res Acad Research

Mathematics

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Dept Molecular Biomedical Scie **Grad Faculty** Dept Molecular Biomedical Sci Professor Sano.Michael Asst Professor Biomedical Program - ENG **Grad Faculty** Biomedical Program-Engineering Sanoff, Henry **Emeritus Professor** Architecture **Grad Faculty** Architecture Santiso,Erik Emilio Asst Professor Chemical & Biomolecular Engr Grad Faculty Chemical & Biomolecular Engr. Santos Soares de Freitas.Frederico Asst Professor History **Grad Faculty** History Plant and Microbial Biology Saravitz.Carole H Research Asst Professor Phytotron Affiliate Grad Faculty Sargent, Frank D. **Emeritus Professor** Animal Science **Grad Faculty** Animal Science Saul, Katherine Assoc Professor Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Savage, Carla Diane Computer Science-engr **Grad Faculty** Computer Science-Engr Savariappan, Paul Rajamanickam Teaching Assoc Professor Statistics **Grad Faculty** Statistics Saveliev, Alexei V Assoc Professo Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Emeritus Professor Sociology & Anthropology Grad Faculty Sawhney, Man M. Sociology & Anthropology Sawicki, Gregory Stephen Adjunct Assoc Professor Biomedical Program - ENG Biomedical Program-Engineering **Grad Faculty** Sawyers, Roby B Professor Accounting-Poole COM Grad Faculty Accounting-Poole COM Sayde,Chadi Asst Professor Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Sazdanovic,Radmila Asst Professor Mathematics Mathematics **Grad Faculty** Scafuro, Alessandra Asst Professor Computer Science-engr **Grad Faculty** Computer Science-Engr Teaching Asst Professor Sci, Tech, Engr & Math (STEM) Sci, Tech, Engr & Math (STEM) Scales, Alice Y Affiliate Grad Faculty Scandalios.John G. **Emeritus Professor Biological Sciences Grad Faculty** Genetics Materials Science & Engineering Materials Science & Engineering Scattergood, Ronald O Emeritus Professor **Grad Faculty** Scearce, J Mark Professor Art and Design **Grad Faculty** Art and Design Grad Faculty Schaefer, Thomas M Distinguished Professor Physics Physics Schaeffer,Blake Adjunct Asst Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Schaffer, Henry E Emeritus Professor Advanced Computing **Grad Faculty** Genetics Schaffer, Henry E **Emeritus Professor Biological Sciences Grad Faculty** Genetics Schaffer, Kristen J Assoc Professor Architecture **Grad Faculty** Architecture Named Distinguished Professor Entomology & Plant Pathology Entomology & Plant Pathology Schal, Coby J **Grad Faculty** Scharf PhD.Frederick S Adjunct Professor Applied Ecology Affiliate Grad Faculty Applied Ecology Scharf, Valery Fairfax Asst Professor **Dept of Clinical Sciences** Affiliate Grad Faculty **Dept of Clinical Sciences** Schecter, Stephen Emeritus Professor **Grad Faculty** Mathematics Mathematics Scheller,Robert Michael Professor For & Envir Res Acad Research **Grad Faculty** For & Envir Res Acad Research Schmidt, Andrew Philip Assoc Professor Accounting-Poole COM **Grad Faculty** Accounting-Poole COM Schmidt, Jessica Young Teaching Asst Professor Affiliate Grad Faculty Computer Science-Engr Computer Science-engr

Dept of Clinical Sciences

Grad Faculty

Dept of Clinical Sciences

Schnabel Lauren V

Assoc Professor

Schnetzer Astrid Schoen Martin Schoenfeld Regina M Scholle.Frank Schrag, Robert Laurence Schrag.Robert Laurence Schreck III, Carl James Schrimper, Ronald A. Schroeder.Bastian Jonathan Schroeder-Moreno.Michelle Shawn Schulman, Michael D. Schulte,Ann C Schultheis Jonathan R. Schwalbe, Michael L. Schwartz Justin Schwartz, Meghan H Schwartz, Steven J. Schwarz, Michael Richard Schweitzer, Mary Higby Schweizer,Heidi Sciaudone, Elizabeth J. Scotford,Martha Scott.Maxwell J Scott.Stephen Carlos Scroggs.Jeffrey Scott Seater, John J. Sederoff, Heike Inge Ada Sederoff.Ron Ross See, Miles T Seekamp,Erin Lynn Selgrade.James Francis Semazzi.Fredrick H Semazzi,Fredrick H Senegal, Pamela Gibson Seracino, Rudolf Serow,Robert C. Seth Carley, Danesha Gita Setser, Bryan Howard Setzer, Sharon M. Severin PhD, Laura Ruth Seyam, Abdel-fattah Mohamed Shah, Sanjay Bikram Shahzad, Muhammad Shamblin,Leigh Shamev.Renzo Shane Simon M Shannon, Steven Christopher Sharara, Mahmoud Ahmed Nabil Ahmed Naguib Sharma, Ratna Rani Shashaani.Sara Shaw, Ping-Tung Shea.Damian Shear.Theodore Henry Shearer.Michael Shearon, Ronald Wilson Sheats, Mary Katherine Sheldon, Brian W Shelhamer, James Henry Shelley, Rowland M Shen, Xipeng Sheppard, John Douglas Sherk, Julieta Trevino Sherman, Barbara Lynn Sherry,Barbara Shertzer, Kyle W Sherwood.Bruce A Sheth.Seema Navan Shew,Barbara B. Shew, Howard D. Shi.Wei Shiffler,Donald A Shih.Jason C. Shim, Eunkyoung Shimura.Fumio Shirwaiker.Rohan Aiit Shoemaker Paul B Shore,Scott Harold Showalter, David Scott Showers, William J.

Shriver, Thomas Eugene

Shumaker Jeffrey, Penny Michelle

Shultz, David A

Assoc Professor Adjunct Professor Assoc Professor Assoc Professor Professor Emeritus Professor Adjunct Asst Professor Emeritus Professor Adjunct Assoc Professor Professor Named Distinguished Professor Emeritus Professor Professo Professor Adjunct Professor Adjunct Asst Professor Emeritus Professor Adjunct Professor Professor Asst Professor Research Asst Professor Professor Adjunct Asst Professor Emeritus Associate Professor Professor Professor Emeritus Distinguished Prof

Professor Research Assoc Professor Teaching Asst Professor Professor Professor Professor Professor Asst Professor Professor of the Practice Professor Adjunct Professor Professor Asst Professor Adjunct Assoc Professor Asst Professo Emeritus Professor

Professor

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Research Professor

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Adjunct Asst Professor

Professor Professor Asst Professor **Emeritus Professor** Adjunct Professor Adjunct Assoc Professor Professor Professor Assoc Professor **Emeritus Professor** Professo Adjunct Asst Professor Research Professor Asst Professor Research Asst Professor Named Professor Professor

Assoc Professor

Emeritus Professor Asst Professor Adjunct Professor Assoc Professor Emeritus Professor Adjunct Assoc Professor Teaching Professor Professor Professor Professor

Teaching Asst Professor

Marine Farth And Atmospheric Chemical & Biomolecular Engr Dept Molecular Biomedical Scie **Biological Sciences** Communication Communication NC Inst of Climate Studies Ag & Resource Economics Civil Const & Environ Engineer Crop & Soil Sciences Agricultural & Human Sciences Psychology Horticultural Science Sociology & Anthropology Materials Science & Engineering Prestage Poultry Science Food, Bioprocess & Nutrition Sc Entomology & Plant Pathology **Biological Sciences** Ag & Resource Economics Civil Const & Environ Engineer Graphic & Industrial Design Entomology & Plant Pathology FIPHD Mathematics Economics-Poole COM Plant and Microbial Biology For & Envir Res Acad Research Parks, Recreation & Tourism Mg Mathematics Marine Farth And Atmospheric Marine, Earth And Atmospheric ELPHD Civil Const & Environ Engineer Horticultural Science TELS English English Textile & Apparel, Technology Biological And Agricultural En Computer Science-engr Master of Management Textile Engineering, Chemistry Dept-Population, Health, Pathobi **Nuclear Engineering** Biological And Agricultural En Biological And Agricultural En Fitts Dept Indust & Syst Engr Marine, Earth And Atmospheric Biological Sciences For & Envir Res Acad Research Mathematics Agricultural & Human Sciences **Dept of Clinical Sciences** Prestage Poultry Science Dept-Population, Health, Pathobi Applied Ecology Computer Science-engr Food, Bioprocess & Nutrition Sc Horticultural Science **Dept of Clinical Sciences**

Dept Molecular Biomedical Scie Applied Ecology Physics Plant and Microbial Biology Entomology & Plant Pathology Entomology & Plant Pathology Crop & Soil Sciences Nonwovens Institute Prestage Poultry Science Textile Engineering, Chemistry Materials Science & Engineering Fitts Dept Indust & Syst Engr Entomology & Plant Pathology Plant and Microbial Biology Accounting-Poole COM Marine, Earth And Atmospheric Sociology & Anthropology Chemistry Sci. Tech. Engr & Math (STEM)

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Marine Farth & Atmospheric Sci Chemical & Biomolecular Engr Dept Molecular Biomedical Sci **Biological Sciences** Communication Communication Marine Earth & Atmospheric Sci Ag & Resource Economics Civil. Const & Env Engineering Cron & Soil Sciences 4-H Youth Dev & Fam & Cons Sci Horticultural Science Sociology & Anthropology Materials Science & Engineering Prestage Poultry Science Food, Bioprocess & Nutrition Sc Entomology & Plant Pathology **Biological Sciences** Ag & Resource Economics Civil, Const & Env Engineering Entomology & Plant Pathology FLPHD Mathematics Economics-Poole COM Plant and Microbial Biology For & Envir Res Acad Research Animal Science Parks Recreation & Tourism Mg Mathematics Marine Farth & Atmospheric Sci Marine Earth & Atmospheric Sci ELPHD Civil, Const & Env Engineering Horticultural Science TELS English English Textile & Apparel Tech & Mgmt Biological And Agri Engr Computer Science-Engi Mgmt, Innovation & Entrepreneu Textile Engr Chemistry & Sci Prestage Poultry Science Nuclear Engr Biological And Agri Engr Biological And Agri Engr Fitts Dept Indust & Syst Engr Marine Earth & Atmospheric Sci For & Envir Res Acad Research Mathematics Agricultural & Extension Edu **Dept of Clinical Sciences** Prestage Poultry Science Population Health&Pathobiology Applied Ecology Computer Science-Engr Food, Bioprocess & Nutrition Sc Horticultural Science Affiliate Grad Faculty **Dept of Clinical Sciences** Dept Molecular Biomedical Sci Affiliate Grad Faculty Applied Ecology Affiliate Grad Faculty Physics Plant and Microbial Biology Entomology & Plant Pathology Entomology & Plant Pathology Soil Science Affiliate Grad Faculty

Prestage Poultry Science Textile Engr Chemistry & Sci Materials Science & Engineering Fitts Dept Indust & Syst Engr Entomology & Plant Pathology Microbiology Accounting-Poole COM Marine Earth & Atmospheric Sci Sociology & Anthropology Chemistry Sci, Tech, Engr & Math (STEM)

Sichitiu Mihail Lorin Professor MS Comp Networking-FCF Grad Faculty Flectrical & Computer Engr Siciliano Paul David Professor Animal Science Grad Faculty Animal Science Grad Faculty Siderelis.Chrvs D. Emeritus Professor Parks, Recreation & Tourism Mg Parks Recreation & Tourism Mg Siewert, Charles Edward Professor Mathematics **Grad Faculty** Nuclear Engi Sikes, Michael L. Assoc Professor **Biological Sciences Grad Faculty Biological Sciences** Silber,Robert Emeritus Associate Professor Mathematics **Grad Faculty** Mathematics Agricultural & Human Sciences 4-H Youth Dev & Fam & Cons Sci Silliman VI, Benjamin Professor **Grad Faculty** For & Envir Res Acad Research For & Envir Res Acad Research Sills.Erin Odonnell Professor **Grad Faculty** Sills.Robert C. Adjunct Assoc Professor Dept-Population.Health.Pathobi Affiliate Grad Faculty Dept Microbiology Path & Para Silverberg PhD.Lawrence M Professor Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Silverman Jules Named Distinguished Professor Entomology & Plant Pathology Grad Faculty Entomology & Plant Pathology Silverstein, Jack William Mathematics **Grad Faculty** Mathematics Professo Simmons III.Otto DeBruhl Research Asst Professor Horticultural Science Grad Faculty Biological And Agri Engr Simmons, Susan Jeanne Professor Advanced Analytics **Grad Faculty** Statistics Simons, Theodore R Emeritus Professor Applied Ecology Grad Faculty Applied Ecology Simons-Rudolph, Joseph M Teaching Asst Professor Psychology Affiliate Grad Faculty Psychology Simpson, Melanie Anne Professor Biochemistry Grad Faculty Biochemistry Affiliate Grad Faculty Simpson, Michael F Adjunct Assoc Professor **Nuclear Engineering** Nuclear Engr Simpson,Robert M Adjunct Professor Dept-Population, Health, Pathobi Grad Faculty Population Health&Pathobiology Simunovic, Josip Research Professor Food, Bioprocess & Nutrition Sc Grad Faculty Food, Bioprocess & Nutrition Sc Marine Earth & Atmospheric Sci Sinclair, Geoffrey Allan Adjunct Asst Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Adjunct Professor Grad Faculty Crop & Soil Sciences Sinclair.Thomas R Crop & Soil Sciences Singer, Michael F. Professor Mathematics **Grad Faculty** Mathematics Singh, Munindar P Professor Computer Science-engr **Grad Faculty** Computer Science-Engr Singh,Nadia Adjunct Assoc Professor **Biological Sciences Grad Faculty Biological Sciences** Siopes, Thomas David **Emeritus Professor** Prestage Poultry Science **Grad Faculty** Prestage Poultry Science Sirota, Brent S Assoc Professor **Grad Faculty** History History Sit,Roger Carson Adjunct Asst Professor Affiliate Grad Faculty Nuclear Engr **Nuclear Engineering** Entomology & Plant Pathology Sit,Timmy L Adjunct Asst Professor Entomology & Plant Pathology **Grad Faculty** Sitar,Zlatko Named Distinguished Professor Materials Science & Engineering Grad Faculty Materials Science & Engineering Skaar, David Allen Research Asst Professor Affiliate Grad Faculty **Biological Sciences Biological Sciences** Emeritus Named Distng'd Prof Skaggs.Richard W Biological And Agricultural En Biological And Agri Engr **Grad Faculty** Skokov, Vladimir Asst Professor Physics **Grad Faculty** Physics Skroch, Walter A Emeritus Professor Horticultural Science **Grad Faculty** Horticultural Science Slankas, John Botious Adjunct Asst Professor Lab for Analytic Sciences Affiliate Grad Faculty Computer Science-Engr History Slatta, Richard Wayne **Emeritus Professor Grad Faculty** Assoc Professor Dept-Population, Health, Pathobi Grad Faculty Population Health&Pathobiology Slenning, Barrett D Sliwinska-Bartowiak, Malgorzata Chemical & Biomolecular Engr Affiliate Grad Faculty Adjunct Professor Chemical & Biomolecular Engr. Slocumb.William S Ctr. for Geospatial Analytics Affiliate Grad Faculty Small, Judy Jo Emeritus Professor English Grad Faculty English Smallwood, James E. Professor Dept Molecular Biomedical Scie **Grad Faculty** Dept Molecular Biomedical Sci Smart,Robert Charles Professor **Biological Sciences Grad Faculty Biological Sciences** Distinguished Professor Smirnov, Alexej I Chemistry **Grad Faculty** Chemistry Smirnova.Tatvana I. Assoc Professor Chemistry Grad Faculty Chemistry Fitts Dept Indust & Syst Engr Fitts Dept Indust & Syst Engr Smith Jr. William A **Emeritus Professor Grad Faculty** Smith PhD Linda McCahe Teaching Assoc Professor Grad Faculty TFLS TFLS Smith, Adrian Alan Adjunct Asst Professor Entomology & Plant Pathology Affiliate Grad Faculty Entomology & Plant Pathology Smith, Adrian Alan Research Asst Professor **Biological Sciences** Affiliate Grad Faculty Biological Sciences Smith, Angela Carmella Teaching Assoc Professor ELPHD **Grad Faculty** ELPHD Smith, Carl B. Textile Engr Chemistry & Sci Emeritus Named Professor Textile Engineering, Chemistry **Grad Faculty** Smith, Charles Eugene Assoc Professor Statistics **Grad Faculty** Statistics Smith, Craig Allen Emeritus Professor Grad Faculty Communication Communication Smith.Craig Randall Adjunct Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Smith.Curtis Lee Adjunct Professor **Nuclear Engineering** Affiliate Grad Faculty Nuclear Engr Smith, Donald E. **Emeritus Professor** Applied Ecology **Grad Faculty** Applied Ecology Psychology Smith, Frank J. Emeritus Professor Psychology **Grad Faculty** Emeritus Associate Professor Textile & Apparel Tech & Mgmt Smith, Gary W Textile & Apparel, Technology **Grad Faculty** Smith, Gavin Paul Professor Landscape Architecture **Grad Faculty** Landscape Architecture Smith, Geoffrey W Dept-Population, Health, Pathobi Population Health&Pathobiology Professor **Grad Faculty** Emeritus Associate Professor Smith.LC Civil Const & Environ Engineer Grad Faculty Civil. Const & Env Engineering Smith, Jared Business Management-Poole COM Grad Faculty Business Management-Poole COM Asst Professor Adjunct Asst Professor Smith, Jordan William Parks, Recreation & Tourism Mg Affiliate Grad Faculty Parks Recreation & Tourism Mg Smith,Lee **Emeritus Professor** English **Grad Faculty** English Smith,Ralph Conover Professor Mathematics **Grad Faculty** Mathematics Emrtus Distng'd Univ Prof Smith, V. Kerry Ag & Resource Economics **Grad Faculty** Ag & Resource Economics Smith, William David Emeritus Named Professor Grad Faculty Crop & Soil Sciences Administration - Research Serv Sociology & Anthropology Smith.William R Assoc Professor Sociology & Anthropology **Grad Faculty** Smith-Moore.Caroline Michael BTEC-Biomfg Training Ed Ctr Grad Faculty Smoot,Jean J **Emeritus Professor** English **Grad Faculty** English Smukowski Heil,Caitlin Suzanne Grad Faculty Asst Professor **Biological Sciences Biological Sciences** Smyth, Thomas J. Crop & Soil Sciences **Grad Faculty** Soil Science Professo Teaching Asst Professor Biological Sciences **Biological Sciences** Snowden.Jov Little Affiliate Grad Faculty Snyder Jr, Samuel Sword College Of Education **Grad Faculty** Snyder, Amy Marie Clinical Asst Professor Dept of Clinical Sciences Affiliate Grad Faculty Dept of Clinical Sciences Snyder.Wesley E. **Grad Faculty Emeritus Professor** Electrical & Computer Engr. Electrical & Computer Engr. Distinguished Professor Grad Faculty Materials Science & Engineering So Franky Materials Science & Engineering Sobrero, Patricia M. Agricultural & Human Sciences Affiliate Grad Faculty Solari, Anthony G. Teaching Asst Professor Public & International Affairs Affiliate Grad Faculty Public & International Affairs Electrical & Computer Engr. Solihin, Yan Adjunct Professor **Grad Faculty** Electrical & Computer Engr. Solomon, Daniel L. Statistics **Grad Faculty** Statistics Sombers,Leslie A Assoc Professor Chemistry **Grad Faculty** Chemistry

Entomology & Plant Pathology

Affiliate Grad Faculty

Entomology

Sonenshine, Daniel E

Adjunct Professor

Song Rui Sorensen.Kenneth A Sorenson.Clvde E Soroos, Marvin Stanley Sorrell Jr, Furman Y Southern, Phillip S. Soyarslan, Sanem Sozzani.Rosangela Spafford, Anne McCombe Spano Sr. Michael Robert Spayd,Sara Elizabeth Spears, Janet F Spears, Jerry Wayne Spencer, Stephanie Laine Spiker, Steven L. Spires Hiller A Spontak, Richard J Spooner, Jean Spooner,Jean Sprinthall, Norman A Spurr, Harvey Wesley Srogl PhD,Jiri St. Amant.Robert A Staddon Jessica Nicola Stafford Jr. Thomas Hugh Stage,Scott Andrew Staicu, Ana-Maria Stalker Jr, Harold T Stallmann, Matthias F.M. Stallrich, Jonathan Wesley Stancil.Daniel D Stanigar, Jennifer J Stanko, Michael A Stansbury, Kim L Stapelmann, Katharina Stark, Charles Robert Starly, Binil Steelman,Toddi Angela Steer, Michael B. Stefanski PhD.Leonard A. Stein, Allen Frederick Stein, Sarah R Stein, Sarah R Stepanova, Anna N. Stephenson Jr.James L. Stevenson, Clinton Dale Stevenson, Kathryn Tate Stewart Jr.Ralsa Marshall Stewart, Amanda Janis Stewart.Katharine Elaine Stewart, William James Stiff.Lee Vernon Stikeleather, Larry F. Stiles.Curtis Alexander Stiles, Phillip J Stinner, Ronald Edwin Stinson, Timothy Linwood Stitzinger, Ernest Lester Stoddard, Edward F. Stolee.Kathryn Thomasset Stoll MD, Regina Stomp, Anne Marie Stone,Eric A Stone, John R Stonebraker, Jeffrey S Storberg-Walker.Julia Stoskopf, Michael K. Stowe. Devorah Ann Marks Strenkowski.John S. Stringer, Andrew Peter Strote, Noah B Struett.Michael John Stuart, Bryan Lynn Stubbs.Harriett S Stuber.Charles William Stuckey Jr, William C Stucky, Jon M. Stumpf,Mitzi Nichole Sturgill, David Brian Subbareddy, Pramod Kumar Veera Suchoff, David H Suh.Minyoung

Assoc Professor
Emeritus Professor
Professor
Emeritus Professor
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Asst Professor
Assoc Professor
Assoc Professor
Lecturer
Emeritus Professor
Emeritus Professor

Emeritus Professor

Professor Distinguished Professor

Emeritus Extension Professor Emeritus Professo **Emeritus USDA Prof** Adjunct Assoc Professor Adjunct Professor Adjunct Assoc Professor Adjunct Asst Professor Assoc Professor Assoc Professor Professor Professor Asst Professor Named Professor Teaching Asst Professor Assoc Professor Assoc Professor Asst Professor Adjunct Assoc Professor Professor Adjunct Professor Named Professor Professor Professor Assoc Professor Emeritus Associate Professor Assoc Professor Adjunct Asst Professor Assoc Professor Asst Professor **Emeritus Associate Professor** Asst Professor Professo **Emeritus Professor** Professor Emeritus Professor Clinical Asst Professor **Emeritus Professor** Emeritus Professor Assoc Professo Professor

Adjunct Professor Emeritus Professor Assoc Professor Adjunct Assoc Professor Professor Clinical Asst Professor

Adjunct Assoc Professor

Emeritus Associate Professor

Asst Professor

Clinical Asst Professor Assoc Professor Assoc Professor Adjunct Assoc Professor Research Assoc Professor Emeritus USDA Prof Emeritus Professor Emeritus Professor Extension Asst Professor Asst Professor Extension Asst Professor

Asst Professor

Statistics
Entomology & Plant Pathology
Entomology & Plant Pathology
Public & International Affairs
Mechanical & Aerospace Engr
Entomology & Plant Pathology
Philosophy & Religious Studies
Plant and Microbial Biology
Horticultural Science
Fitts Dept Indust & Syst Engr
Horticultural Science
Crop & Soil Sciences
Animal Science
History
Biological Sciences
TELS
Chemical & Biomolecular Engr
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Entomology & Plant Pathology
Chemical & Biomolecular Engr

Biological Sciences TELS Chemical & Biomolecular Engr Biological And Agricultural En Biological And Agricultural En Curr, Instr & Counselor Ed-CED Entomology & Plant Pathology Chemical & Biomolecular Engr Computer Science-engr Computer Science-engr Acad Stu Aff-VC and Dean Off Psychology Statistics Crop & Soil Sciences Computer Science-engr Statistics Electrical & Computer Engr. Office of Faculty Affairs Business Management-Poole COM Social Work **Nuclear Engineering** Prestage Poultry Science Fitts Dept Indust & Syst Engr For & Envir Res Acad Research

Nuclear Engineering
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For & Envir Res Acad Research
Electrical & Computer Engr.
Statistics
English
Communication

Communication Plant and Microbial Biology Microbiology

Food, Bioprocess & Nutrition Sc Parks, Recreation & Tourism Mg Agricultural & Human Sciences Public & International Affairs Office of Faculty Affairs Computer Science-engr College Of Education Biological And Agricultural En Dept of Clinical Sciences Physics Grads & Temps

Integrated Pest Mgmt-Research

English
Mathematics
Marine, Earth And Atmospheric
Computer Science-engr
Fitts Dept Indust & Syst Engr

For & Envir Res Acad Research Biological Sciences Civil Const & Environ Engineer Business Management-Poole COM ELPHD Dept of Clinical Sciences

Dept-Population, Health, Pathobi

Mechanical & Aerospace Engr

Dept-Population,Health,Pathobi History Public & International Affairs Biological Sciences Dept Of Math & Science Educ -

Genetics
Textile & Apparel, Technology
Plant and Microbial Biology
4-H Youth Dev & Fam & Cons Sci
Computer Science-engr
Mechanical & Aerospace Engr
Crop & Soil Sciences

Textile & Apparel, Technology

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Entomology
Philosophy & Religious Studies
Plant and Microbial Biology
Horticultural Science
Faculty Fitts Dept Indust & Syst Engr
Horticultural Science
Crop & Soil Sciences

History

Statistics

Entomology

Entomology & Plant Pathology

Public & International Affairs

Mechanical & Aerospace Engr

TELS

Materials Science & Engineering

Biological Sciences

Biological And Agri Engr Curr, Instr & Counselor Ed-CED Entomology & Plant Pathology Chemical & Biomolecular Engr. Computer Science-Engr Computer Science-Engr Curr, Instr & Counselor Ed-CED Psychology

Statistics
Crop & Soil Sciences
Computer Science-Engr
Statistics

Electrical & Computer Engr.

Business Management-Poole COM

Social Work
Nuclear Engr
Prestage Poultry Science
Fitts Dept Indust & Syst Engr
Forest Biomaterials
Electrical & Computer Engr.

Statistics English Communication Communication

Plant and Microbial Biology Microbiology

Food, Bioprocess & Nutrition Sc Parks Recreation & Tourism Mg Agricultural & Human Sciences Public & International Affairs

Psychology

Computer Science-Engr Sci, Tech, Engr & Math (STEM) Biological And Agri Engr Dept of Clinical Sciences Physics

Entomology
English
Mathematics

Marine Earth & Atmospheric Sci Computer Science-Engr Fitts Dept Indust & Syst Engr

Biological Sciences Civil, Const & Env Engineering Business Management-Poole COM ELPHD Dept of Clinical Sciences

Population Health&Pathobiology
Population Health&Pathobiology

Public & International Affairs
Biological Sciences
Sci, Tech, Engr & Math (STEM)
Genetics
Textile & Apparel Tech & Memt

Plant and Microbial Biology
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Computer Science-Engr
Mechanical & Aerospace Engr
Crop & Soil Sciences
Textile & Apparel Tech & Mgmt

Suh Moon Won Emeritus Named Professor Textile & Annarel Technology Grad Faculty Textile & Annarel Tech & Mgmt Sullivan, Craig V. Applied Ecology Grad Faculty Grad Faculty Sullivan.Gene A. Emeritus Professor Cron & Soil Sciences Cron & Soil Sciences Sullivan, Vida Blair Dowling Adjunct Assoc Professor Computer Science-engr **Grad Faculty** Computer Science-Engl Sullivant, Seth M. Professor Mathematics **Grad Faculty** Mathematics Sumerel, Marie B Adjunct Asst Professor ELPHD Affiliate Grad Faculty ELPHD Sun, Dali Asst Professor Physics **Grad Faculty** Physics For & Envir Res Acad Research For & Envir Res Acad Research Sun.Ge USDA Professor **Grad Faculty** Supak.Stacy Kathleen Teaching Asst Professor Ctr. for Geospatial Analytics **Grad Faculty** Parks Recreation & Tourism Mg Emeritus Associate Professor Surh.Gerald History **Grad Faculty** Suter.Steven E Professor Dept of Clinical Sciences Grad Faculty Dept of Clinical Sciences Sutton, Rhonda Saeleth Craver Extension Asst Professor Administration - Extension Ser Affiliate Grad Faculty Agricultural & Human Sciences Sutton.Turner Bond Emeritus Professo Entomology & Plant Pathology Grad Faculty Entomology & Plant Pathology Swaisgood, Harold E. **Emeritus Distinguished Prof** Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Swallow, William H. **Emeritus Professor** Statistics Grad Faculty Statistics Swann Julie LeAnne Distinguished Professor Fitts Dept Indust & Syst Engr Grad Faculty Fitts Dept Indust & Syst Engr Swanson, Clifford Richard Emeritus Associate Professor Dept Molecular Biomedical Scie Grad Faculty Dept Molecular Biomedical Sci Swarts PhD.Jason Professor English Grad Faculty English Swartz.Paul Douglas Research Asst Professor Biochemistry - METRIC Affiliate Grad Faculty Biochemistry Swartzel,Kenneth R Emeritus Named Distng'd Prof Food, Bioprocess & Nutrition Sc **Grad Faculty** Food, Bioprocess & Nutrition Sc Switzer, William Lawrence Emeritus Associate Professor Chemistry Chemistry **Grad Faculty** Sylla,Edith D. Emeritus Professor Grad Faculty History History Szanto.Agnes Professor Mathematics **Grad Faculty** Mathematics College Of Education Sztain.Paola Professor Grad Faculty TFIS Marine Earth & Atmospheric Sci Tacker.Robert C. Adjunct Asst Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Taheri PhD,Javad Research Assoc Professor Fitts Dept Indust & Syst Engr Affiliate Grad Faculty Fitts Dept Indust & Syst Engr Tai,Eiko Foreign Languages And Literatu **Grad Faculty** Professo Foreign Languages and Lit Affiliate Grad Faculty Takeuchi,Yu Integrated Pest Mgmt-Research Integrated Pest Mgmt-Research Takeuchi,Yu Adjunct Asst Professor For & Envir Res Acad Research Affiliate Grad Faculty For & Envir Res Acad Research Taliercio, Earl USDA Asst Professor Crop & Soil Sciences Grad Faculty Crop & Soil Sciences Asst Professor Tang.Wenyuan Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Tarpy, David R. Entomology & Plant Pathology Professor Grad Faculty Entomology & Plant Pathology **Grad Faculty** Tate,Lloyd Patrick **Emeritus Professor Dept of Clinical Sciences** Population Health&Pathobiology Tateosian, Laura Gray Teaching Assoc Professor Ctr. for Geospatial Analytics **Grad Faculty** Parks Recreation & Tourism Mg Adjunct Professor Dept-Population, Health, Pathobi Population Health&Pathobiology Taubenberger, Jeffrey K **Grad Faculty** Taveirne, Michael Edward Teaching Asst Professor **Biological Sciences** Affiliate Grad Faculty **Biological Sciences** Tayebali, Akhtarhusein A Professor Civil Const & Environ Engineer Grad Faculty Civil, Const & Env Engineering Emeritus Professor Taylor Jr.Raymond G ELPHD Grad Faculty ELPHD Taylor, Andrew J Professor Public & International Affairs Grad Faculty Public & International Affairs Taylor, Bradley William Asst Professor Applied Ecology **Grad Faculty** Applied Ecology Taylor, Eileen Z Professor Accounting-Poole COM **Grad Faculty** Accounting-Poole COM Taylor,Linda Reinders For & Envir Res Acad Research **Grad Faculty** For & Envir Res Acad Research Lecture Taylor, Nicholas Thiel Assoc Professor Communication **Grad Faculty** Communication Tector, John O. Assoc Professor College of Design Grad Faculty Architecture Dept of Clinical Sciences Tefft.Karen Michele Clinical Asst Professor Dept of Clinical Sciences Affiliate Grad Faculty Art and Design Temple.Traci Lvn Teaching Asst Professor DFLTA Affiliate Grad Faculty Templin Jr, Robert Grant Professor of the Practice FIPHD Affiliate Grad Faculty FI PHD Terando.Adam J Adjunct Asst Professor Applied Ecology **Grad Faculty** Applied Ecology Terry, Stephen D Research Asst Professor Mech & Aerospace Engr Contract **Grad Faculty** Mechanical & Aerospace Engr Tesar,Paul Emeritus Professo Architecture **Grad Faculty** Architecture Thakur, Siddhartha Professor Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Tharp, Alan Lee Emeritus Professor Computer Science-engr Computer Science-Engr **Grad Faculty** Affiliate Grad Faculty Tharrington, Karen Teaching Asst Professor Foreign Languages And Literatu Foreign Languages and Lit Theil Flizabeth C **Emeritus Professor** Biochemistry **Grad Faculty** Biochemistry Theil, Michael Herbert **Emeritus Professor** Textile Engineering, Chemistry **Grad Faculty** Textile Engr Chemistry & Sci Theis, Thomas Asst Professor Chemistry **Grad Faculty** Chemistry Biomedical Program - ENG Biomedical Program-Engineering Theis, Thomas Adjunct Asst Professor **Grad Faculty** Theriot, Casey Michelle Asst Professor Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Theuer, Richard C. Affiliate Grad Faculty Adjunct Professor Food, Bioprocess & Nutrition Sc Food, Bioprocess & Nutrition Sc Theyson, Thomas W Adjunct Professor Textile & Apparel, Technology Affiliate Grad Faculty Textile & Apparel Tech & Mgmt Thies-Sprinthall, Lois M **Emeritus Associate Professor** TELS **Grad Faculty** TELS Entomology & Plant Pathology Entomology & Plant Pathology Thiessen, Lindsey Danielle Asst Professor Grad Faculty Thigpen III, John F Adjunct Assoc Professor Sea Grant Program Affiliate Grad Faculty Parks Recreation & Tourism Mg Thomas,Carrie J Research Assoc Professor Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci Thomas, Erik R Professor English **Grad Faculty** English Thomas, John E Grad Faculty Professor Physics Physics Thomas.Judith F. Emeritus Professor Plant and Microbial Biology **Grad Faculty** Plant and Microbial Biology Sociology & Anthropology Thomas.Melvin E Assoc Professor Grad Faculty Sociology & Anthropology Thomas.Rachael Research Asst Professor Dept Molecular Biomedical Scie Affiliate Grad Faculty Dept Molecular Biomedical Sci Thomas.Richard J Emeritus Professor Forest Biomaterials **Grad Faculty** Forest Biomaterials Research Assoc Professor Thompson PhD, Donald Barry Thermal Protection & Comfort C Affiliate Grad Faculty Textile Engr Chemistry & Sci Emeritus USDA Prof Crop & Soil Sciences Grad Faculty Crop & Soil Sciences Thompson, Donald L. Thompson, Elizabeth Ellen Anderson Lecture **Biological Sciences Grad Faculty Biological Sciences** Professor English Grad Faculty English Thompson.Jon F Thompson, Maxine S Assoc Professor Sociology & Anthropology Sociology & Anthropology **Grad Faculty** Thompson William F Distinguished University Prof Plant and Microbial Biology Grad Faculty Plant and Microbial Biology Thomson, Margareta Maria Assoc Professor TELS **Grad Faculty Elementary Education** Thomson, Randy J. **Emeritus Associate Professor** Sociology & Anthropology **Grad Faculty** Sociology & Anthropology **Biological Sciences** Thorne,Jeffrey L Professor **Biological Sciences Grad Faculty** Thornton, Courtney High Office of Faculty Affairs Affiliate Grad Faculty Thrall,Donald E. Emeritus Professor Dept Molecular Biomedical Scie **Grad Faculty** Dept Molecular Biomedical Sci

Biological Sciences

Affiliate Grad Faculty

Biological Sciences

Threadgill,David W

Adjunct Professor

Thuente David I Emeritus Professor Computer Science-engr Grad Faculty Computer Science-Engr English Thuente, Mary Helen Grad Faculty Emeritus Professor English Named Distinguished Professor Grad Faculty Thurman, Walter N. Ag & Resource Economics Ag & Resource Economics Tiezzi Mazzoni Della Stella Ma,Francesco Research Asst Professor Animal Science **Grad Faculty** Animal Science Tilley, David R. **Emeritus Professor** Physics **Grad Faculty** Physics Tilotta.David C Professo Forest Biomaterials **Grad Faculty** Forest Biomaterials Ting,Siu-Man Professor FIPHD **Grad Faculty** FIPHD Tittle, Charles Ray Emeritus Professor Sociology & Anthropology Sociology & Anthropology **Grad Faculty** Textile Engineering, Chemistry Tomasino.Charles Emeritus Professor **Grad Faculty** Textile Engr Chemistry & Sci Biomedical Program - ENG Tommerdahl Mark A Assoc Professor **Grad Faculty** Biomedical Program-Engineering Tompkins, Mary B Dept-Population.Health.Pathobi Grad Faculty Tompkins, Mary B Emeritus Professor Dept-Population, Health, Pathobi **Grad Faculty** Population Health&Pathobiology Tompkins, Wayne Emeritus Professor Dept-Population.Health.Pathobi Grad Faculty Population Health&Pathobiology Tonelli,Alan E Named Professor Textile Engineering, Chemistry **Grad Faculty** Textile Engr Chemistry & Sci Tong.Quansong Adjunct Asst Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Toomer Ondulla Tyvette Adjunct Assoc Professor Prestage Poultry Science Grad Faculty Prestage Poultry Science Food, Bioprocess & Nutrition Sc Food, Bioprocess & Nutrition Sc Toomer, Ondulla Tyvette USDA Asst Professor Grad Faculty Toplikar, Susan Margaret Emeritus Associate Professor Art and Design Grad Faculty Art and Design **Grad Faculty** Townsend,J K Professor Electrical & Computer Engr. Electrical & Computer Engr. Townsend, Latricia Walker Teaching Asst Professor Friday Institute Affiliate Grad Faculty TELS Assoc Professor Graphic & Industrial Design Graphic & Industrial Design Townsend, Scott **Grad Faculty** Tracy, Joseph B. Professor Materials Science & Engineering Materials Science & Engineering Grad Faculty Tran.Chau Minh Teaching Assoc Professor Mechanical & Aerospace Engr Affiliate Grad Faculty Mechanical & Aerospace Engr Tran.Hien Trong Professor Mathematics **Grad Faculty** Mathematics Travers.Christopher Steven Teaching Asst Professor FIPHD **Grad Faculty** FLPHD Tredway,Lane Patrick Adjunct Professor Entomology & Plant Pathology Affiliate Grad Faculty Entomology & Plant Pathology Treme,Julianne Teaching Assoc Professor Ag & Resource Economics **Grad Faculty** Ag & Resource Economics For & Envir Res Acad Research Trettin,Carl Adjunct Professor For & Envir Res Acad Research Affiliate Grad Faculty Triantaphyllou, Hedwig Hirschm **Emeritus Professor** Entomology & Plant Pathology **Grad Faculty** Entomology & Plant Pathology Trivedi,Shweta Teaching Assoc Professor Animal Science Grad Faculty Animal Science Truong, Van-Den Emeritus USDA Prof Food, Bioprocess & Nutrition Sc Food, Bioprocess & Nutrition Sc **Grad Faculty** Electrical & Computer Engr. Grad Faculty Electrical & Computer Engr. Trussell.Henry J. Professor Tryggvason, Gretar Adjunct Professor **Nuclear Engineering** Affiliate Grad Faculty Nuclear Engr Tsiatis, Anastasios A Emeritus Named Distng'd Prof Statistics **Grad Faculty** Statistics **Biological Sciences** Biological Sciences Tsuji,Jun Professor **Grad Faculty** Tsuji,Yoshiaki Professor **Biological Sciences Grad Faculty Biological Sciences** Tsynkov, Semyon Victor Professor Grad Faculty Mathematics Mathematics Mechanical & Aerospace Engr Mechanical & Aerospace Engr Tu.Juei Feng Professor Grad Faculty Assoc Professor Electrical & Computer Engr. Grad Faculty Electrical & Computer Engr. Tuck.James Grad Faculty Tucker, William P **Emeritus Professor** Chemistry Chemistry Tung,Chi C. **Emeritus Professor** Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Tupler,Larry A Adjunct Asst Professor Fitts Dept Indust & Syst Engr Affiliate Grad Faculty Fitts Dept Indust & Syst Engr Turinsky, Paul J. Emeritus Professo **Nuclear Engineering Grad Faculty** Nuclear Engr Turner.Lvnn G. Agricultural & Human Sciences Grad Faculty Emeritus Professor Food, Bioprocess & Nutrition Sc Turner.Lvnn G. Food, Bioprocess & Nutrition Sc **Grad Faculty** Mgmt. Innovation&Entrepreneur Grad Faculty Business Management-Poole COM Tyler.Beverly B Professor Tyler-Walker Jr, Richard Edward Adjunct Asst Professor **Counseling Services** Affiliate Grad Faculty Curr, Instr & Counselor Ed-CED Tzeng,Jung-Ying Professor Statistics **Grad Faculty** Statistics Umbach, Paul David Professor **Grad Faculty** Adult & Higher Education **ELPHD** Graphic & Industrial Design Graphic & Industrial Design Umstead.Kelly Ann Asst Professor **Grad Faculty** Underwood, Benjamin Shane Assoc Professor Civil Const & Environ Engineer **Grad Faculty** Civil, Const & Env Engineering Emeritus Professor Underwood.Herbert A. Applied Ecology **Grad Faculty** Applied Ecology Prestage Poultry Science Affiliate Grad Faculty Uni.Zehava Adjunct Professor Prestage Poultry Science Unrath.Claude R. Horticultural Science **Emeritus Professor** Horticultural Science **Grad Faculty** Unruh Snyder,Lori June Assoc Professor Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Unsal, Mithat **Grad Faculty** Physics Professor Physics Entomology & Plant Pathology Entomology & Plant Pathology Upchurch,Robert G. USDA Assoc Professor **Grad Faculty** Uzsoy,Reha Named Distinguished Professor Fitts Dept Indust & Syst Engr **Grad Faculty** Fitts Dept Indust & Syst Engr Vaden, Shelly L. **Dept of Clinical Sciences** Professor **Dept of Clinical Sciences Grad Faculty** Animal Science Valacchi PhD.Giuseppe Assoc Professor Kannapolis Research Grad Faculty Affiliate Grad Faculty Adjunct Asst Professor ELPHD ELPHD Valek, Millicent Ann Dept Molecular Biomedical Scie Dept Molecular Biomedical Sci Van Landeghem, Laurianne Chantal Asst Professor **Grad Faculty** VanDerWall, William J. **Emeritus Asst Professor** Sci, Tech, Engr & Math (STEM) **Grad Faculty CED General Support** VanDuyn,John W. **Emeritus Named Professor** Entomology & Plant Pathology **Grad Faculty** Entomology Emeritus Professor Plant and Microbial Biology Plant and Microbial Biology VanDyke,C Gerald **Grad Faculty** Animal Science VanHeugten.Eric Professor Animal Science **Grad Faculty** Vandenbergh.John G. Emeritus Professor Applied Ecology **Grad Faculty** Applied Ecology Grad Faculty Vann.Matthew Christopher Asst Professor Crop & Soil Sciences Crop & Soil Sciences Vann.Rachel Atwell Asst Professor Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Grad Faculty Vargo,Edward L Entomology & Plant Pathology Vashaee, Daryoosh Assoc Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Vasu,Ellen S. Emeritus Professor College Of Education **Grad Faculty** Vasu,Michael L. Emeritus Associate Professor Public & International Affairs **Grad Faculty** Public & International Affairs Assoc Professor Computer Science-Engr Vatsavai.Ranga Raiu Computer Science-engr **Grad Faculty** Adult & Higher Education Vaughan.George B Emeritus Professor Adult & Higher Education **Grad Faculty** Veal Matthew Biological And Agricultural En Affiliate Grad Faculty Veety, Elena Nicolescu Teaching Asst Professor Adv Self-pwr Sys Integr SensrT **Grad Faculty** Electrical & Computer Engr. Velev,Orlin Dimitrov Named Professor Chemical & Biomolecular Engr **Grad Faculty** Chemical & Biomolecular Engr. NG Pwr Elec Natl Mfg Innovatio Veliadis, John Victor Professor **Grad Faculty** Electrical & Computer Engr. Venditti,Richard A Professor Forest Biomaterials **Grad Faculty** Forest Biomaterials Vepraskas, Michael John Named Distinguished Professor Crop & Soil Sciences **Grad Faculty** Soil Science Verghese, Kuruvilla **Emeritus Professor** Nuclear Engineering Grad Faculty Nuclear Engr

Vermillion Christopher Raymond Vick.Candace Goode Vickery.Kenneth P. Vigani, Alessio Vila-Parrish, Ana Raquel Villamizar Martinez PhD,Lenin Arturo Villani,Sara Michelle Vincent, Kenneth Steven Viniotis.Ioannis Vinueza Benitez, Nelson Rodrigo Vinzant.Cynthia Leslie Voiland, Michael P Vose James M Vouk, Mladen Alan Vukina.Tomislav Vukomanovic. Jelena Wade,Robert W Wages, Dennis P. Wagger, Michael G. Wahls, Harvey E. Walden,Michael L. Waldvogel, Michael Gerard Walek.Mary L. Walgenbach, James F. Walker Jr.John T Walker, Christopher Scott Walker, Glenn M Walker, Kara Kristina Walker, Mark D Walkowiak, Temple A Wall Jr.John N. Wallace III James M Wallace III, James M. Walls PhD, Douglas M. Walsh, Rebecca Ann Walter, William M. Wan, Hong Wang, Gufeng Wang, Hong Wang, Jack Peng-Yu Wang,Kai Wang, Wenye Wang,Xiaogang Wang,Xiaogang Wang,Xiaoqiu Ward Donn R Ward, Jason Kellam Ward.Michael E. Ward, Michael E. Ward.Stephanie Hill Warner, John Christopher Warner, Wendy J Warr.Richard Simon Warren.Catherine A Warren, Jocelyn DeVance Warren, Sarah Timberlake Warsing, Donald P Waschka II,Rodney Anthony Washburn, Steven Paul Wasik John L. Wasiolek.Suzanne J Waters Jr. William M Watson, Benjamin Allen Watson, David W Watson, Larry W Watzin.Marv Wear, David N Weber, Jerome B. Webster, Zodiac Tracy Wechsberg PhD, Wendee Mara Wegmann, Karl William Wehner, Todd Craig Wehring PhD, Bernard William Wei.Qingshan Weinhold.Paul S Weisel Dehorah Lamm Weiss,Ira R Weissinger, Arthur K. Weisz,P Randall Welby, Charles W. Wellenius, Ian Patrick Wells, I.C.

Assoc Professor Assoc Professor History Emeritus Professor Clinical Asst Professor Adjunct Assoc Professor Asst Professor Extension Asst Professor Professor History Professor Assoc Professor Asst Professor Adjunct Professor Distinguished Professor Professor Asst Professor Teaching Asst Professor Emeritus Professor Emeritus Professo Named Distinguished Professor Extension Associate Professor Emeritus Associate Professor Professor Lecturer Asst Professor Adjunct Assoc Professor Research Asst Professor Professo Assoc Professor TELS English Professor Lecturer **Emeritus Associate Professor** Assoc Professor English Assoc Professo English Emeritus USDA Prof Assoc Professor Assoc Professor Physics Asst Professor Research Asst Professor Professor Adjunct Professor Adjunct Professor Asst Professor Emeritus Professor Asst Professor Lecture FIPHD Professor of the Practice ELPHD Asst Professor Adjunct Assoc Professor Assoc Professor Professor Professor **English** Assoc Professor Social Work **Emeritus Associate Professor** Assoc Professor Professor **Emeritus Professor** Statistics Emeritus Professor ELPHD Adjunct Asst Professor **Emeritus Associate Professor** Assoc Professor Professo **Emeritus Associate Professor** Professor Adjunct Professor Emeritus Professor Teaching Asst Professor Physics Adjunct Professor

Assoc Professor

Asst Professor

Research Professor

Emeritus Professor

Emeritus Professor

Emeritus Professor

Emeritus Professor

Adjunct Assoc Professor

Research Assoc Professor

Teaching Asst Professor

Professo

Professor

Mechanical & Aerospace Engr Parks, Recreation & Tourism Mg Dept of Clinical Sciences Fitts Dept Indust & Syst Engr Dept of Clinical Sciences Entomology & Plant Pathology Electrical & Computer Engr. Textile Engineering, Chemistry Mathematics Sea Grant Program For & Envir Res Acad Research Ofc of Research & Innovation Ag & Resource Economics Parks, Recreation & Tourism Mg Parks. Recreation & Tourism Mg Dept-Population, Health, Pathobi Crop & Soil Sciences Civil Const & Environ Engineer Ag & Resource Economics Entomology & Plant Pathology Sociology & Anthropology Entomology & Plant Pathology Crop & Soil Sciences Dept Molecular Biomedical Scie Biomedical Program - ENG Dept of Clinical Sciences Business Management-Poole COM Sociology & Anthropology Sociology & Anthropology Food, Bioprocess & Nutrition Sc Fitts Dept Indust & Syst Engr Chemistry Grads & Temps Forest Biotech Program Marine, Earth And Atmospheric MS Comp Networking-ECE Computer Science-engr Electrical & Computer Engr. Animal Science Food Bioprocess & Nutrition Sc Biological And Agricultural En Animal Science Marine, Earth And Atmospheric Agricultural & Human Sciences Dean's Office-Poole COM For & Envir Res Acad Research Business Management-Poole COM Interdisciplinary Studies Animal Science Sci, Tech, Engr & Math (STEM) Computer Science-engr Entomology & Plant Pathology Sci, Tech, Engr & Math (STEM) College of Natural Resources For & Envir Res Acad Research Crop & Soil Sciences Psychology Marine, Earth And Atmospheric Horticultural Science **Nuclear Engineering** Chemical & Biomolecular Engr Biomedical Program - ENG Public & International Affairs Mgmt, Innovation&Entrepreneur Crop & Soil Sciences Crop & Soil Sciences Marine, Earth And Atmospheric Electrical & Computer Engr. Entomology & Plant Pathology

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Grad Faculty

ELPHD

Physics

Psychology

Nuclear Engr

Horticultural Science

Crop & Soil Sciences

Crop & Soil Sciences

Sci, Tech, Engr & Math (STEM)

Entomology & Plant Pathology

Dept Of Math & Science Edu-tlc

For & Envir Res Acad Research

For & Envir Res Acad Research Crop & Soil Sciences

Marine Earth & Atmospheric Sci

Chemical & Biomolecular Engr.

Public & International Affairs

Biomedical Program-Engineering

Mgmt, Innovation & Entrepreneu

Marine Earth & Atmospheric Sci

Electrical & Computer Engr.

Entomology & Plant Pathology

Computer Science-Engr

Grad Faculty

Grad Faculty

Mechanical & Aerospace Engr Parks Recreation & Tourism Mg History **Dept of Clinical Sciences** Fitts Dept Indust & Syst Engr Dept of Clinical Sciences Entomology & Plant Pathology History Electrical & Computer Engr. Textile Engr Chemistry & Sci Mathematics For & Envir Res Acad Research Computer Science-Engr Ag & Resource Economics Parks Recreation & Tourism Mg Parks Recreation & Tourism Mg Crop & Soil Sciences Civil, Const & Env Engineering Ag & Resource Economics Entomology & Plant Pathology Sociology & Anthropology Entomology & Plant Pathology Marine Earth & Atmospheric Sci Dept Molecular Biomedical Sci Biomedical Program-Engineering **Dept of Clinical Sciences** Business Management-Poole COM Elementary Education English Sociology & Anthropology Sociology & Anthropology English English Food, Bioprocess & Nutrition Sc Fitts Dept Indust & Syst Engr **Physics** For & Envir Res Acad Research Marine Earth & Atmospheric Sci Electrical & Computer Engr. Computer Science-Engi Electrical & Computer Engr. Animal Science Food Bioprocess & Nutrition Sc Biological And Agri Engr FI PHD ELPHD Animal Science Marine Earth & Atmospheric Sci Agricultural & Extension Edu Business Management-Poole COM **English** Social Work For & Envir Res Acad Research Business Management-Poole COM Interdisciplinary Studies Animal Science Statistics

Wells Randy Wenig,Robert F. Weninger.Keith R. Wentworth, Thomas R. Werner, Dennis J. Wernsman, Earl A. Wertz, Dennis W. Wescott II, Joseph Warren Wesp,Julie K Wessels.Walter J. West II.Harvey A West, Andre Juliian West Harry C. Westermeyer, Hans Daniel Westmoreland, Phillip R Whangbo, Myung H. Wheatley John H. Wheeler Elisabeth A. Whetten, Ross W. Whipker,Brian E Whitacre, Michael David White.Jeffrev G. White.Leonard Wilson White.Robert E. White.Susan Norma White,Susan Norma Whited, Robert Lowell Whitfield.Anna Elizabeth Whitlow,Lon Weidner Whitted, John Turner Whitten.Jerry Lynn Widman Laura Marie Wiebe,Eric N Wiegmann, Brian M Wiener, Russell W Wiese, Dennis Eugene Wiley, Stephen B Wilk John C Wilkinson, Richard R. Williams Jr, Billy Merle Williams, Antony J Williams, Brenda B Williams, Cathy Sue Williams, Charles Michael Williams.Christopher J. Williams Cranos M Williams, Gavin John Williams, James O Williams, Laurel E Williams.Laurie A Williams, Linda R. Williams.Paul F. Williams.Saundra Wall Williams.Saundra Wall Williams, Stelfanie Williamson, John D Willits, Daniel H Willoughby PhD, Julie Ann Wilson, Alyson Gabbard Wilson, Elizabeth B Wilson, James Reed Wilson, Jonee Wilson,Lorenzo G. Wilson, Mark A Winchester Jr, Samuel Clyde Wineland, Michael John Wineland, Michael John Winner, William E Winston.Hubert Winston.Hubert Wirt, Lesley Grieco Wiseman, Angela Michelle Witchger, Robert James Witt, Mary Ann Wogalter, Michael S Wohlgenant, Michael K. Wolcott, Donna Lee Wolcott, Thomas G. Wolfe,Barbara A. Wolfinger, Russell D. Wolfram, Walter A Wong,Chau-Wai

Professor Emeritus Associate Professor Professor **Emeritus Professor Emeritus Distinguished Prof** Emeritus Named Distng'd Prof Assoc Professor Adjunct Asst Professor Asst Professor Emeritus Professor Research Assoc Professor Assoc Professor Emeritus Associate Professor Asst Professor Professor Professor Emeritus Associate Professor Emeritus Professor Professor Professo Emeritus Associate Professor Assoc Professor Professor of the Practice Emeritus Professor Adjunct Assoc Professor

Asst Professor Professor **Emeritus Professor** Adjunct Professor **Emeritus Professor** Asst Professor Professor Named Professor Adjunct Assoc Professor Adjunct Asst Professor Assoc Professor Emeritus Professor Emeritus Professor Professor Professor Teaching Asst Professor Teaching Asst Professor Emeritus Professor Adjunct Asst Professor Assoc Professor Assoc Professor Emeritus Professor Adjunct Professor Distinguished Professor

Adjunct Asst Professor Adjunct Asst Professor Emeritus Associate Professor Emeritus Professor

Emeritus Clinical Assoc Prof

Professor

Professor Professor Emeritus Professor Asst Professor Emeritus Professor Assoc Professor Emeritus Named Professor

Adjunct Professor Emeritus Professor Extension Associate Professor Extension Associate Professor

Assoc Professor
Adjunct Asst Professor
Emeritus Professor
Emeritus Professor
Emeritus Named Professor
Emeritus Named Professor
Emeritus Professor
Adjunct Asst Professor
Adjunct Asst Professor
Named Distinguished Univ Prof

Asst Professor

Statistics

Electrical & Computer Engr.

English

Cron & Soil Sciences Sci. Tech. Engr & Math (STEM) Physics Plant and Microbial Biology Horticultural Science Crop & Soil Sciences Chemistry FIPHD Sociology & Anthropology Fronomics-Poole COM Ctr Addit Manf & Log-CAMAL Textile Extension English Dept of Clinical Sciences Chemical & Biomolecular Engr Chemistry Sci, Tech, Engr & Math (STEM) Forest Biomaterials Tree Improvement Cooperative Horticultural Science **Dept of Clinical Sciences** Crop & Soil Sciences FREEDM Center Mathematics Sea Grant Program Marine, Earth And Atmospheric Accounting-Poole COM Entomology & Plant Pathology Animal Science Electrical & Computer Engr. Chemistry Psychology Sci, Tech, Engr & Math (STEM) Entomology & Plant Pathology Marine, Earth And Atmospheric Communication Animal Science Landscape Architecture Institute For Trans Research & Textile Engineering, Chemistry Mathematics ELPHD Prestage Poultry Science Prestage Poultry Science Electrical & Computer Engr. Chemistry Public & International Affairs **Dept of Clinical Sciences** Computer Science-engi Social Work Accounting-Poole COM COE-Dean's Offic Grads & Temps FIPHD ELPHD Horticultural Science **Grad Faculty** Biological And Agricultural En **Grad Faculty** Textile Engineering, Chemistry Statistic - ORIED LAS CALS - Academic Programs Fitts Dept Indust & Syst Engr TELS Horticultural Science

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Adult & Higher Education
ELPHD
Horticultural Science
Biological And Agri Engr
Textile Engr Chemistry & Sci
Statistics
Agricultural & Extension Edu
Fitts Dept Indust & Syst Engr
TELS
Horticultural Science
Psychology
Textile & Apparel Tech & Mgmt

Population Health&Pathobiology For & Envir Res Acad Research Chemical & Biomolecular Engr. Chemical & Biomolecular Engr.

Elementary Education ELPHD Foreign Languages and Lit

Ag & Resource Economics
Marine Earth & Atmospheric Sci
Marine Earth & Atmospheric Sci
Dept of Clinical Sciences
Statistics
English
Electrical & Computer Engr.

Wood Michael William Adjunct Asst Professor Dent of Clinical Sciences Affiliate Grad Faculty Dent of Clinical Sciences Woodbridge Janie Fleming Asst Professor Textile & Apparel, Technology Grad Faculty Textile & Apparel Tech & Mgmt Woodlev PhD.Alexander Lake Asst Professor Cron & Soil Sciences Grad Faculty Cron & Soil Sciences Woodrum,Eric M. Emeritus Professor Sociology & Anthropology **Grad Faculty** Sociology & Anthropology Sociology & Anthropology Wormsley, William E Adjunct Assoc Professor Affiliate Grad Faculty Sociology & Anthropology Worrall,Louise Gail Adjunct Asst Professor Nuclear Engineering Affiliate Grad Faculty Nuclear Engi Worsham, Arch D. Emeritus Professor Crop & Soil Sciences **Grad Faculty** Crop & Soil Sciences Wright, Charles Gerald Emeritus Professor Entomology & Plant Pathology Grad Faculty Entomology Affiliate Grad Faculty Computer Science-Engr Wright, David R Adjunct Asst Professor Computer Science-engi Wright,Fred Andrew Grad Faculty Distinguished Professor Statistics Statistics Wright.Ruth Lorraine Emeritus Associate Professor Accounting-Poole COM Grad Faculty Accounting-Poole COM Wu PhD, Tianfu Asst Professor Electrical & Computer Engr. **Grad Faculty** Electrical & Computer Engr. Wu.Fen Professo Mechanical & Aerospace Engr Grad Faculty Mechanical & Aerospace Engr Wu,Qingqing Asst Professor Business Management-Poole COM **Grad Faculty** Business Management-Poole COM Wu.Yichao Adjunct Professor Statistics Grad & Temp Affiliate Grad Faculty Statistics Wust, Valerie Ann Assoc Professor Foreign Languages And Literatu Grad Faculty Foreign Languages and Lit Wyer, Marv B Grad Faculty Psvchology Assoc Professor Psychology Crop & Soil Sciences Dean's Office - CALS Wynne, Johnny Calvin Emeritus Named Professor Grad Faculty Wysk, Richard A Named Professor Fitts Dept Indust & Syst Engr Grad Faculty Fitts Dept Indust & Syst Engr Xi,Lin Research Assoc Professor Animal Science Grad Faculty Animal Science Xia,Xin Rui **Biological Sciences** Affiliate Grad Faculty Xiang,Qiuyun Plant and Microbial Biology Grad Faculty Plant and Microbial Biology Professor Xiao.Luo Asst Professor Statistics **Grad Faculty** Statistics Xie.Devu Professor Plant and Microbial Biology Grad Faculty Plant and Microbial Biology Xie.Lian Professor Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci Xie,Tao Adjunct Professor Computer Science-engr Affiliate Grad Faculty Computer Science-Engr Xu PhD,Guozhou Asst Professor Biochemistry **Grad Faculty** Biochemistry Mechanical & Aerospace Engr Grad Faculty Mechanical & Aerospace Engr Xu,Chengying Assoc Professor Xu,Xu Asst Professor Fitts Dept Indust & Syst Engr **Grad Faculty** Fitts Dept Indust & Syst Engr Xu,Yingjiao Professor Textile & Apparel, Technology Grad Faculty Textile & Apparel Tech & Mgmt Adjunct Assoc Professor Electrical & Computer Engr. Affiliate Grad Faculty Electrical & Computer Engr. Yadav.Meeta Nuclear Engineering Grad Faculty Asst Professor Yang,Ge Nuclear Engr Yang,Shu Asst Professor Statistics **Grad Faculty** Statistics Yao, Yuan Asst Professor Forest Biomaterials **Grad Faculty** Forest Biomaterials Affiliate Grad Faculty Yapici, Yavuz Electrical & Computer Engr. Ye,Long Research Asst Professor Physics **Grad Faculty** Physics Ye,Weimin Adjunct Asst Professor Entomology & Plant Pathology Affiliate Grad Faculty Entomology & Plant Pathology Yelverton,Fred H. Grad Faculty Professor Crop & Soil Sciences Crop & Soil Sciences Yencho, George C Named Professor Horticultural Science Grad Faculty Horticultural Science Research Asst Professor Affiliate Grad Faculty Textile Engr Chemistry & Sci Yeom, Bong-Yeol Textile Engineering, Chemistry Yingling, Yaroslava G Professor Materials Science & Engineering **Grad Faculty** Materials Science & Engineering Yoder,Jeffrey A. Professor Dept Molecular Biomedical Scie **Grad Faculty** Dept Molecular Biomedical Sci Yoon,Intae Assoc Professor Social Work **Grad Faculty** Social Work York, Alan Clarence Emeritus Named Professor Crop & Soil Sciences Grad Faculty Crop & Soil Sciences Asst Professor Dept of Clinical Sciences Dept of Clinical Sciences Yoshikawa.Hiroto **Grad Faculty** Young Jr, Robert V. English Emeritus Professor English Grad Faculty Young, Albert R. Professor **Physics Grad Faculty Physics** Young, Carl A Assoc Professor TFLS **Grad Faculty** TFLS Young,Eric Professor Administration - Research Serv **Grad Faculty** Horticultural Science Mgmt, Innovation&Entrepreneur Young, Greggry S **Grad Faculty** Young, James H. **Emeritus Professor** Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Young,Robert E. Emeritus Professor Fitts Dept Indust & Syst Engr Grad Faculty Fitts Dept Indust & Syst Engr Young, Robert M Adjunct Professor Computer Science-engi Affiliate Grad Faculty Computer Science-Engr Young, Sidney S Statistics Grad & Temp Affiliate Grad Faculty Statistics Professor Young, Sierra Asst Professor Biological And Agricultural En **Grad Faculty** Biological And Agri Engr Young, Tamara V. Assoc Professor ELPHD **Grad Faculty** ELPHD Youngblood III,Robert Walker Nuclear Engineering Adjunct Professor Affiliate Grad Faculty Nuclear Engr Youngblood, Curtis Edmund Teaching Asst Professor Economics-Poole COM Affiliate Grad Faculty Economics-Poole COM Youngsteadt, Elsa Asst Professor Applied Ecology **Grad Faculty** Applied Ecology Youssef, Mohamed A Professor Biological And Agricultural En Grad Faculty Biological And Agri Engr Teaching Assoc Professor Yu, Donna G Grad Faculty Electrical & Computer Engr. Electrical & Computer Engr. Yu.Shaocai Adjunct Professor Marine, Earth And Atmospheric Affiliate Grad Faculty Marine Earth & Atmospheric Sci Yu,Ting Adjunct Assoc Professor Computer Science-engr Affiliate Grad Faculty Computer Science-Engr Yu, Wensong Research Assoc Professor FREEDM Center **Grad Faculty** Electrical & Computer Engr. Yuan,Fuh-Gwo Named Professor Mechanical & Aerospace Engr **Grad Faculty** Mechanical & Aerospace Engr Yuan, Wengiao Professor Grad Faculty Biological And Agri Engr Biological And Agricultural En Yuter.Sandra E. Professor Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci Zagacki Kenneth S Grad Faculty Professor Communication Communication Zaharoff.David Alexander Assoc Professor Biomedical Program - ENG **Grad Faculty** Biomedical Program-Engineering Zahn, Margaret A Emeritus Professor Sociology & Anthropology **Grad Faculty** Sociology & Anthropology Zambon PhD, Joseph Brendan Research Asst Professor Marine, Earth And Atmospheric **Grad Faculty** Marine Earth & Atmospheric Sci Biological Sciences Applied Ecology Zanno.Lindsav E Research Asst Professor **Grad Faculty** Zeldin,Darryl C Adjunct Professor Toxicology Affiliate Grad Faculty Toxicology Zelna,Carrie L Adjunct Asst Professor Academic Success Affiliate Grad Faculty ELPHD Social Work Zelter.Barbara A. Social Work Affiliate Grad Faculty Clinical Asst Professor Zeng,Zhaobang Named Distinguished Professor Horticultural Science Grad Faculty Statistics Zenkov, Dmitry Valerievich Professor Mathematics **Grad Faculty** Mathematics Zering, Kelly D. Professor Ag & Resource Economics **Grad Faculty** Ag & Resource Economics Zerkle, Michael Leigh Adjunct Assoc Professor **Nuclear Engineering** Affiliate Grad Faculty Nuclear Engr Zerr,Robert Joseph Adjunct Asst Professor Nuclear Engineering Affiliate Grad Faculty Nuclear Engr Professor **Grad Faculty** Statistics Zhang, Daowen Statistics

Electrical & Computer Engr.

Affiliate Grad Faculty

Electrical & Computer Engr.

Zhang,Qing Chun Jon

Adjunct Professor

Zhang,Xiangwu Zhang, Yang Zheng,Xiaoyong Zhirnov,Victor Zhou, Huiyang Zhou,Yihui Zhu, Mengmeng Zhu.Yong Zhu.Yuntian T Zia.Paul Z

Ziegler,Conrad Lawrence Zikry, Mohammed A Zink, James Richard Zobel,Richard W Zonderman, David Aaron Zorner, Paul S. Zorowski.Carl F. Zuckerman, Gilroy J.

Zuiches, James J de Queiroz, Anderson Rodrigo de Souza e Silva, Adriana Araujo van Kempen.Theo A van Zanten.John H. van der Lelie.Daniel von Haefen,Roger H.

Professor Professor Professor Adjunct Assoc Professor Professor

Assoc Professor Asst Professor Professor Named Professor Emrtus Distng'd Univ Prof Adjunct Professor Named Professor Assoc Professor

Adjunct Professor Professor Adjunct Professor Emeritus Named Professor

Emeritus Professor Adjunct Asst Professor Professor Adjunct Professor Teaching Asst Professor Adjunct Professor Assoc Professor

College Of Textiles-dean's Off Marine, Earth And Atmospheric Ag & Resource Economics Materials Science & Engineering Electrical & Computer Engr. Biological Sciences Textile Engineering, Chemistry Mechanical & Aerospace Engr Materials Science & Engineering Civil Const & Environ Engineer Marine, Earth And Atmospheric Mechanical & Aerospace Engr Public & International Affairs

Crop & Soil Sciences History Horticultural Science College Of Engineering-dean's Accounting - MAC Sociology & Anthropology Civil Const & Environ Engineer

Animal Science BTEC-Biomfg Training Ed Ctr Plant and Microbial Biology Ag & Resource Economics

Communication

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Textile Engr Chemistry & Sci Marine Earth & Atmospheric Sci Ag & Resource Economics Materials Science & Engineering Electrical & Computer Engr. Biological Sciences Textile Engr Chemistry & Sci Mechanical & Aerospace Engr Materials Science & Engineering Civil. Const & Env Engineering Marine Earth & Atmospheric Sci Mechanical & Aerospace Engr Public & International Affairs Crop & Soil Sciences History Horticultural Science Mechanical & Aerospace Engr

Sociology & Anthropology Civil, Const & Env Engineering Communication Animal Science Chemical & Biomolecular Engr.

Microbiology Ag & Resource Economics

NC State Policies

North Carolina State University is committed to academic integrity, and all students are required to adhere to the <u>NC State Code of Student Conduct (https://policies.ncsu.edu/policy/pol-11-35-01/)</u>. Individual policies on conduct, including those listed below, are posted on <u>University Policies, Regulations, and Rules (https://policies.ncsu.edu/)</u> (PRRs).

University Patent Procedures (https://policies.ncsu.edu/policy/pol-10-00-01/)

Grievance Procedures for Graduate Students (https://policies.ncsu.edu/regulation/reg-11-40-02/).

Code of Student Conduct (https://policies.ncsu.edu/policy/pol-11-35-01/)

Academic Integrity (https://policies.ncsu.edu/policy/pol-11-35-01/)

Policy on Illegal Drugs (https://policies.ncsu.edu/policy/pol-04-20-05/)

Sexual Harassment Policy (https://policies.ncsu.edu/regulation/reg-04-25-02/)

Racial Harassment Policy (https://policies.ncsu.edu/regulation/reg-04-25-02/)

University Copyright Procedures (https://policies.ncsu.edu/regulation/reg-01-25-03/)

Equal Opportunity and Non-Discrimination

It is the policy of the State of North Carolina to provide equality of opportunity in education and employment for all students and employees. Accordingly, the university does not practice or condone unlawful discrimination in any form against students, employees or applicants on the basis of race, color, religion, creed, sex, national origin, age, disability or veteran status. Nor does the university allow discrimination on the basis of sexual orientation with respect to internal university matters that do not contravene federal or state law and that do not interfere with the University's relationships with outside organizations, including the federal government, the military, ROTC, and private employers. [NOTE: The NC State University equal opportunity and nondiscrimination policy includes transsexual individuals within the policy's prohibitions against discrimination on the basis of sex. This includes actual or perceived gender identity and gender expression. See Price Waterhouse v. Hopkins, 490 U.S. 228 (1989); Smith v. City of Salem, 378 F.3d 566 (6th Circ. 2004).] Retaliation against any person complaining of discrimination is in violation of federal and state law and North Carolina State University policy, and will not be tolerated.

Unlawful Harassment

Harassment based upon race, color, religion, creed, sex, national origin, veteran status, age, or disability is a form of discrimination in violation of federal and state law and North Carolina State University policy and will not be tolerated. It is the internal policy of North Carolina State University to prohibit harassment on the basis of sexual orientation. Retaliation against any person complaining of harassment is in violation of federal and state law and North Carolina State University policy, and will not be tolerated. North Carolina State University will respond promptly to all complaints of harassment and retaliation. Violation of this policy can result in serious disciplinary action up to and including expulsion for students or discharge for employees.

Every individual is encouraged, and should feel free, to seek assistance, information and guidance from his/her supervisor, the Office for Equal Opportunity, the Office of Student Conduct or the Employees Relations section of Human Resources. For additional information, contact: Office for Equal Opportunity, 1 Holladay Hall, Box 7530, North Carolina State University, Raleigh, NC 27695-7530, Phone: (919) 513-1234 or 515-3148.

Disability Services Office

Individuals desiring reasonable accommodations for their documented disabilities should contact the <u>Disability Services Office</u> (https://dso.dasa.ncsu.edu/) (DSO), 2751 Cates Avenue, Third Floor-First Year College Commons, (919) 515-7653 (Voice), (919) 515-8830 (TTY). Services and accommodations are provided based on an individual's documented needs and are determined in

consultation with the individual and a DSO representative. For students, such requests should be made far in advance of registration deadlines to ensure timely services and accommodations. DSO will maintain appropriate confidentiality of records and communication regarding disability.

Archives

Incoming students are governed by the rules and regulations in force the semester they are accepted into a program. Previous Graduate Catalogs can be downloaded in PDF format here.

Graduate Catalog (2018-2019) (https://grad.ncsu.edu/wp-content/uploads/2018/07/Graduate-Catalog-2018-2019.pdf) Graduate Catalog (2017-2018) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2017-2018.pdf) Graduate Catalog (2016-2017) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2016-2017.pdf) Graduate Catalog (2015-2016) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2015-2016.pdf) Graduate Catalog (2014-2015) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2014-2015.pdf) Graduate Catalog (2013-2014) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2013-2014.pdf) Graduate Catalog (2012-2013) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2012-2013.pdf) Graduate Catalog (2011-2012) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2011-2012.pdf) Graduate Catalog (2010-2011) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2010-2011.pdf) Graduate Catalog (2009-2010) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2009-2010.pdf) Graduate Catalog (2008-2009) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2008-2009.pdf) Graduate Catalog (2007-2008) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate-Catalog-2007-2008.pdf) Graduate Catalog (Spring 2007) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate Catalog Spring 2007.pdf) Graduate Catalog (Fall 2006) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate_Catalog_Fall_2006.pdf) Graduate Catalog (Spring 2006) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate Catalog Spring 2006.pdf) Graduate Catalog (Fall 2005) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate Catalog Fall 2005.pdf) Graduate Catalog (Spring 2005) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate Catalog Spring 2005.pdf) Graduate Catalog (Fall 2004) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate Catalog Fall 2004.pdf) Graduate Catalog (Spring 2004) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate Catalog Spring 2004.pdf) Graduate Catalog (Fall 2003) (https://grad.ncsu.edu/wp-content/uploads/2017/08/Graduate Catalog Fall 2003.pdf)